COMPARE THE QUALITY OF LIFE (QOL) OF MALE AND FEMALE PATIENTS AFFECTED WITH HIV/AIDS RECEIVING ANTIRETROVIRAL THERAPY FROM SELECTED NON GOVERNMENTAL ORGANIZATION

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER 2015

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CERTIFICATE

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"Donot be afraid of sudden terror nor of trouble from the wicked, when it comes, for the Lord will be your confidence and will keep your foot from being caught"

- Proverb S3:25, 26

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ABSTRACT

A comparative study to assess the quality of life (QOL) among male and female patients affected with HIV/AIDS receiving antiretroviral therapy from selected Non Governmental organization of Madurai.

The study was carried out to 1) to assess the quality of life among male and female patients with HIV/AIDS who are on ART. 2) To compare the level of quality of life between male and female patients with HIV/AIDS who are on ART. 3) To find out the relationship between different domains of QOL among male subjects with HIV/AIDS on ART. 4) To find out the relationship between different domains of QOL among female subjects with HIV/AIDS on ART. 5) To find out the association between the quality of life of male and female patients affected with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, and duration of receiving ART and Co-morbid conditions).

The descriptive comparative study was conducted by using Convenience sampling technique among 60 samples with HIV/AIDS on ART in which 30 were female and remaining 30 were male samples. The tool for the data collection was WHO QOL-HIV BRIEF SCALE. The main outcome measured in this study was QOL and some related demographic and clinical variables.

In males (0%) none of them had very good QOL, poor QOL and very poor QOL. In males 28 (93.3%) of subjects were having good quality of life and 2 (6.7%) of subjects were having moderate QOL. Whereas in females (0%) none of them had very good QOL, poor QOL and very poor QOL. In females 9 (30%) of subjects having good QOL and 21 (70%) of subjects

were having moderate QOL. male HIV patients the mean QOL score is 102 and the female HIV patients the mean QOL score is 92, which is lower than the male HIV patients the mean QOL score. The standard deviation of male HIV patients is 6.17 and the standard deviation female HIV patient is 6.07. The unpaired 't' value is 6.34 is statistically significant at 0.05 level. There was a significant association between the QOL score and gender. There was a significant association between the QOL of male patients affected with HIV /AIDS on ART only with their duration of illness. There was no significant association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles.

Men had higher QOL score than women. Men had good QOL score whereas women had only moderate QOL score. Men reported Good QOL in the physical domain and environmental domain while women had good QOL in the psychological and spiritual domain. All the seven domains correlated significantly with the overall QOL for male and female patients with HIV/AIDS on ART.

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INTRODUCTION

BACKGROUND OF THE STUDY:

"Progress is the activity of today and assurance of Tomorrow"

- R.W.Emerson

The risk of acquiring AIDS is increased by the presence of gonorrhea or other sexually transmitted disease. There are two variants of the HIV virus, HIV-1 and HIV-2 both of with ultimately cause AIDS**. (Mosby's Medical Dictionary, 2009).**

Acquired Immune Deficiency Syndrome (AIDS) is caused by a human immunodeficiency virus (HIV) that weakens the immune system and makes the body susceptible to various diseases and unable to recover from diseases. HIV/AIDS is one of the most complex health problems in 21st century and has become a pandemic disease that threatens the world population. Since there is no cure in sight, the disease continues to spread at an alarming rate **(WHO, Topical overview: HIV AIDS .2008)**

HIV/AIDS has emerged as the single most formidable challenge to public health, human rights and development in the new millennium. United Nations Programme on HIV/AIDS (UNAIDS) estimates 33 million people across the world are living with HIV/AIDS. This mainly affects sexually active young people. Young adults aged 15–29 years, account for 32% of AIDS cases reported in India and the number of young women living with HIV/AIDS is twice that of young men **(Park, 2010).**

India has the third largest number of people living with HIV in the world 22.1 million at the end of 2013 and accounts for about 4 out of 10 people living with HIV in the region. In India, the numbers of new HIV infections declined by 19 per cent,

yet it still accounted for 38 per cent of all new HIV infections in the region. The proportions of people who do not have access to antiretroviral therapy treatment are 64 per cent in India. In Asia and the Pacific, the number of AIDS—related deaths fell by 37 per cent between 2005 and 2013. India recorded a 38 per cent decline in AIDS—related deaths between 2005 and 2013. During this period, there was a major scale up of access to HIV treatment. At the end of 2013, more than 700,000 people were on antiretroviral therapy, the second largest number of people on treatment in any single country. In India, HIV prevalence among female sex workers dropped from 10.3 per cent to 2.7 per cent but it increased in the states of Assam, Bihar and Madhya Pradesh. **(The Hindu, 2014).**

The initial period following the contraction of HIV is called acute HIV primary HIV of acute retroviral syndrome many individuals develop an influenza like illness or a mononucleosis like illness 2-4 weeks post exposure with others have no significant symptoms. Symptoms occur in 40-90% cases and most commonly include fever, large tender lymph nodes, throat inflammation rash, headache and / or sores of the mouth and genitals. The rash which occurs in 20-50% of cases presents itself on the trunk and is maculopapular, classically some people also develop opportunistic infections at this stage **(UNAIDS, 2010).**

The duration of the symptoms varies but is usually one or two weeks. People with AIDS have an increased risk of developing various viral induced cancer including Kaposis Sarcoma, Burkitts Lymphoma, primary control nervous system lymphoma and cervical cancer. Kaposis sarcoma is the most common cancer occurring in 10 to 20% people with HIV. The second most common cancer is lymphoma which is the cause of death of nearly 16% of people with AIDS, and is the initial sign of AIDS. HIV is a retrovirus that primarily infects components of human

immune system such as CD4 cells, macrophages and dondritio cells. It directly and indirectly destroys CD4 T cells. The primary causes of death from HIV/AIDS are opportunistic infections and cancer both of which care frequently the result of the progressive failure of the immune system. Risk of cancer appears to increase once the CD4 count below 500/µl **(Aichard Selik, 2014).**

Tong et al (2012) explained that, HIV/AIDS is a global pandemic as of 2012 approximately 35.3 million people have HIV worldwide with the number of new infections that year being about 2.3 million. This is down from 3.1 million new infections in 2001 of these approximately 16.8 million are women and 3.4 million are less than 15 year old. It resulted in about 1.6 million deaths in 2012 down from a peek of 2.2 million in 2005. Combinations (or cockteis) consisting of at least three medications belonging to at least two types or class of antiretrovirus gents was promising for HIV/AIDS affected people. Initially treatment is typically a non-nucleoside reverse transcriptase inhibitors (NNRTI) plus two nucleoside analogue reverse transcriptase inhibitors (NRTIs). Typical NRTIs include zidovudine (AZT) or tenofouir (TDF) and lamivudine (3 Tc) or emtricitibine (FTC).

The **World Health Organization** recommends antiretroviral in all adolescents adults and pregnant women with a CD4 count less then 500/µL with this being especially important in those with count less than 350/µL or those with symptoms regardless of CD4 counts. WHO recommends that criteria for starting ART to be defined in national protocols and that these protocols should be based on the minimum clinical data and wherever available CD4 counts. Quality of life is a multidimensional concept whose definition and assessment remains controversial HIV/AIDS represents a high economic impact from society point of view. Over all self perception of QOL has been shown to be a useful screening item for assessing

global QOL. QOL relates both to adequacy of the material circumstances and personal feelings about these circumstances. As health is generally cited as one of the most important determinants of over all QOL it has been suggested that QOL may be uniquely affected by specific disease process such as AIDS **(Global Health Policy, 2012).**

Mannheimer et al, (2012), conducted a study in which participants who reported 100% ART adherence achieved significantly higher QOL scores at 12 months of follow-up when compared to those with poorer ART adherence, and QOL improved with ART treatment and ART adherence.

Antiretroviral therapy has changed the face of AIDS and changed how HIV is viewed globally; nursing as a result of this disease has been changed. The way people view nursing globally has also changed nurses go from providing essential supportive care to leading clinical treatment, now nurses are becoming the mainstay of antiretroviral treatment programs globally. In global HIV care nurses are not looking to prescribe medications without having ongoing referral options interdisciplinary communication and support by collaborating physicians. A better term for this mode of practice is task sharing where nurses can and do prescribe antiretroviral medications but they do so in collaborating with and with support of their physician colleagues **(Pillips, 2004).**

NEED FOR THE STUDY:

"What a man thinks of himself. That is what determines, or rather indicates, his fate"

- Henry David Thoraces

The World Health Organization (2009) estimated that there are 33.4 million people worldwide living with HIV/AIDS, with 2.7 million new HIV infections per year and 2.0 million annual deaths due to AIDS. According to UNAIDS 2009 report, worldwide some 60 million people have been infected since the start of the pandemic, with some 25 million deaths, and 14 million orphaned children in southern Africa alone. In another study on 2009 done in India revealed that around 2.4 million people are currently living with HIV **(Palella, Delaney and Moorman, 2009).**

Globally there were estimated 33 million people infected with HIV in 2009 with 2.6 million new infections and 1.8 million HIV related deaths. Nearly an estimated 5 million people infected with HIV lived in Asia in 2009 and about 3,80,000 people were newly infected. **(UNAIDS, Global Epidemic Update, 2010).**

First HIV case in India was reported in Chennai in 1986. First AIDS case was reported from Mumbai in 1987. Now HIV cases are reported from all states of India. The free anti Retro Viral Therapy (ART) initiative was launched by the Government of India on the first April 2004 in six high prevalent states (Andhra Pradesh, Tamilnadu, Karnataka, Maharashtra, Nagaland, Manipur) in eight government hospitals. As in March 2010, there are now 306 ART centers in the country providing comprehensive ART services to the eligible people. In country with 2.2 million infected with HIV, currently about 4,28,638 people have been enrolled for ART**. (NACO, 2012).**

India has the third-highest number of people living with HIV in the world with 2.1 million Indians accounting for about four out of 10 people infected with the deadly virus in the Asia—Pacific region, according to a UN report. The report by UNAIDS, the United Nations programme on HIV/AIDS, said that 19 million of the 35 million people living with the virus globally do not know their HIV—positive status and so ending the AIDS epidemic by 2030 will require smart scale—up to close the gap. The first—ever UNAIDS 'Gap Report' said after sub—Saharan Africa, the region with the largest number of people living with HIV is Asia and the Pacific. At the end of 2013, there were an estimated 4.8 million people living with HIV across the region. Six countries - China, India, Indonesia, Myanmar, Thailand, and Vietnam - account for more than 90 per cent of the people living with HIV in the region **(The Hindu, 2014)**

The HIV/AIDS epidemic is one of the world's most serious public health and social problems. According to World Health Organization (WHO) and the United Nations Program on HIV/AIDS (UNAIDS) estimated that closer to 7,40,000 people are infected with HIV in China, including 1,05,000 individuals suffering from AIDS. This past year, new cases of HIV infection in China numbered at about 48,000 **(Dandona Rakhi, Dandona Lalit, et.al, 2005)**

India is one of the largest and most populated countries in the world, with over one billion inhabitants. Of this number, it's estimated that around 2.4 million people are currently living with HIV. Having a population of around a billion, an increase in 0.1% of HIV prevalence would mean an increase by over half a million in the HIV-infected patients. The estimated adult HIV prevalence was 0.32% in 2008 and 0.31% in 2009. The states with high HIV prevalence rates include Manipur (1.40%), Andhra

Pradesh (0.90%), Mizoram (0.81%), Nagaland (0.78%), Karnataka (0.63%) and Maharashtra (0.55**%). (UNAIDS, 2010).**

HIV and AIDS affect all segments of India's population, from children to adults, businessmen to homeless people, female sex workers to housewives, and gay men to heterosexuals. There is no single 'group' affected by HIV. However, HIV prevalence among certain groups i.e sex workers, injecting drug users, truck drivers, migrant workers, men who have sex with men remains high and is currently around 6 to 8 times that of the general population **(Wikipedia, 2014)**

In contrast to the common perception that, HIV is transmitted predominantly through injecting drug use and sex between men, the overwhelming majority of infections in India occur through heterosexual sex. In many cases married men have acted as 'bridge populations' between vulnerable populations and general populations; women who believe they are in monogamous relationships are becoming infected because of their husbands have had multiple sexual partners. Studies have shown that women now account for around 39 percent of HIV infections **(The World Bank, 2008)**.

WHO, (2010) issued revised treatment guidelines recommending earlier initiation of antiretroviral therapy at a CD4 count of <350 cells/mm^3. These new criteria increased the total number of people medically eligible for therapy by roughly 50% from 10 million to 15 million.

According to WHO survey report on the status of AIDS in India which is taken in 2010 described that the spread of HIV in India has been uneven. HIV epidemics are more severe in the southern half of the country and the far north-east. The highest HIV prevalence rates are found in Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka in the south; and Manipur and Nagaland in the north-

east**.** India has taken an aggressive step towards HIV/AIDS control by implementing the third phase of its National AIDS Control Programme, which is designed to reverse the spread of HIV/AIDS by 2012 (**Priyadharshi Thakur, 2008)**.

In India, more than 4,28,638 people living with HIV/AIDS are accessing ART from public sector hospitals, clinics as of June 2010. NACO proposes to deliver ARV therapy through effectively functioning health infrastructure and properly trained and motivated staff. The annual number of AIDS deaths has declined from 2.1 million (1.9 million to 2.3 million) in 2004 to 1.8 million in (1.6 million – 2.4 million) in 2009 as a result of the substantial increase in access to HIV treatment in recent years. **(UNAIDS, Report on Global AIDS Epidemic, 2010).**

Studies of UN AIDS organization to unite world against AIDS, in 2008, found that HIV/AIDS often generates misunderstanding, prejudice, confusion and fear. Some people with HIV/AIDS report that the stigma can at times be worse than the illness itself. People may be less willing to offer support and empathy if someone is experiencing a HIV/AIDS. Those with a history of HIV/AIDS may find that others become uncomfortable or distrustful around them and that they lose contact with family and friends. People who are known to have had HIV/AIDS may find it more difficult to find employment or get a promotion, even if they are well at the time **(http:data.unaids.org, 2008).**

National AIDS Control Organization (NACO, 2012) described that living with HIV infections provides tangible social support to fellow individuals living with HIV men and women from a variety of backgrounds. Education by nurses on positive living helps the PLHIV to have emotional, spiritual and psychological

support which enhances their quality of life. People with HIV can live full and healthy lives if they take care of themselves and access treatments. ART delay progression of HIV causes poor quality of life.

Najomi, Ambary and Ranjbar (2008) explained that, with the recent advances in clinical tests and treatments for those suffering from HIV/AIDS, the survival of those patients has been increased and their quality of life has become an important focus for researchers and health care providers. Health related quality of life focuses specially focuses on major aspects of health related quality of life includes physical, emotional and cognitive functioning, mobility and self care.

The life style process and health status of individual varies upon each other irrespective of age, sex, physical intensity, interactive ability and it goes on but the predominant scenario which decide the QOL and health is desired by gender, hence this point of view triggered the researcher to compare the quality of life among HIV patients between the genders.

STATEMENT OF THE PROBLEM:

A comparative study to find out the quality of life (QOL) among male and female patients affected with HIV/AIDS receiving antiretroviral therapy from selected Non Governmental organization of Madurai.

OBJECTIVES:

- To assess the quality of life among male and female patients with HIV/AIDS who are on ART
- To compare the level of quality of life between male and female patients with HIV/AIDS who are on ART.

- To find out the relationship between different domains of QOL among male subjects with HIV/AIDS on ART.
- To find out the relationship between different domains of QOL among female subjects with HIV/AIDS on ART.
- To find out the association between the quality of life of male and female patients affected with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, and duration of receiving ART and Co-morbid conditions).

HYPOTHESES:

H_1: There will be a significant difference in the quality of life between male and female patients affected with HIV/AIDS receiving ART.

H_2: There will be a significant positive relationship between the different domains of quality of life between male subjects with HIV/AIDS on ART.

H_3: There will be significant positive relationship between the different domains of quality of life between female subjects with HIV/AIDS on ART.

H_4: There will be a significant association between quality of life among the male patients with HIV/AIDS on ART with their selected demographic variable (age, education, occupation, income, marital status, locality, duration of illness, duration of receiving ART).

H_5: There will be a significant association between quality of life among the female patients with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, duration of receiving ART).

OPERATIONAL DEFINITIONS:

Quality of Life:

Quality of life refers to physical, emotional, psychological, economical and social well being of an individual – Wikipedia.

In this study it refers to the quality of life expressed by the male and female subjects with who is HIV/AIDS on ART which was measured by the QOL-HIV brief scale.

HIV/AIDS:

HIV/AIDS refers to the organism human immunodeficiency virus that infects the cells of the immune system and make the human body more favorable for infection and advanced stage of HIV infection causes acquired immuno deficiency syndrome (AIDS). It may take 10-15 years.

In this study it refers to the male and female who are infected with HIV and in the advanced stage of HIV infection and presenting with AIDS and who is on ART.

Antiretroviral Therapy:

ART is the treatment that stops the multiplication of retrovirus one of the retro virus is the human immuno deficiency virus (HIV) that causes AIDS.

In this study it refers to the ART treatment which is given to the male and female who are infected with HIV/AIDS to suppress and control the HIV infection from selected Non Governmental organization of Madurai.

DELIMITATIONS:

1. Sample was selected from Non Governmental organization of Madurai.
2. The data collection period was limited to 6 weeks.

PROJECTED OUTCOMES:

The study will be useful for the nurses to determine the underlying factors and also to plan and provide the holistic care that is most appropriate for on HIV/AIDS infected individual.

CONCEPTUAL FRAMEWORK

This study is based on Ferrell quality of life model. Health related quality of life is the extent to which one's usual or expected physical, emotional and social well being are affected by a medical condition or its treatment. It is the degree to which a person enjoys the important possibilities of her life, possibilities result from the opportunities and limitations each person has in her life and reflect the interaction of interpersonal and intrapersonal factors. In this study the investigator Ferrell quality of life model to compare the health related quality of life of the male and female patients with HIV/AIDS on ART.

HIV can affect all 7 domains of health related quality of life. Here, HIV can influence all the domains of HR-QOL i.e. physical functioning, role limitations due dependency psychological disturbance, social domains, spiritual and general health, social functioning, and environmental domains. In physical domain, the factors considered are activities of daily living, self care and mobility. Under the role limitations due to dependency, factors considered are problems in daily activities due to physical health and ability to perform well with physical problems. Under the role limitations due to psychological problems domain, the factors considered are activities of daily living hindered with emotional problems. Under the social domain, the factors considered are tiredness, interest in doing activities of daily living and energetic at work. Under the well being domain the factors considered are sleep, rest, calmness and peacefulness and happiness. Under the social functioning domain, the factors considered are visiting friends and physical problem which hinders with social gatherings. Under the bodily pain domain, the factors considered are pain and pain

interfering with physical health. Under the general health domain, factors considered are perception of their health and disease progression.

The factors influencing health related quality of life of patients with HIV/AIDS on ART are demographic factors such as age, education, occupation, income, religion, marital status and social support and clinical factors such as CD4 count duration of disease, and initiation of ART. HIV and ART has severe impact on the clients. So the health related quality of life of HIV male and female patients is also altered.

All the 7 domains are interrelated; change in one domain can affect the other domain. Satisfaction in all domains leads to high HR-QOL and low satisfaction leads to low HR-QOL. Low or high HR-QOL is influenced by various domains such as physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy, emotional well being, social functioning, bodily pain and general health. Therefore an understanding of external conditions and influencing factors is essential for nursing interventions to enhance the personal satisfaction with life.

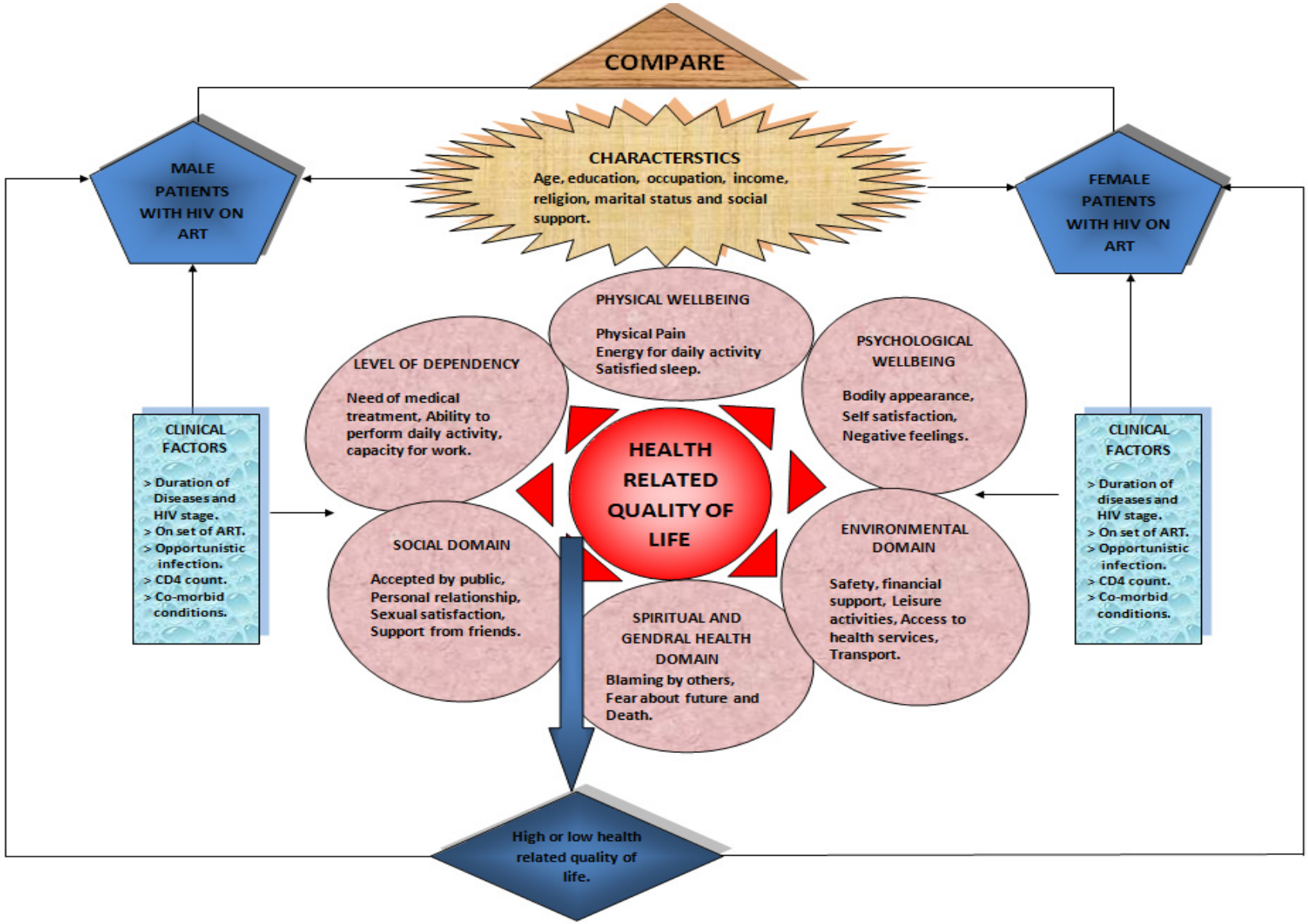

Figure 1 : Modified B.R. Ferrals Quality of Life Model

CHAPTER – II

REVIEW OF LITERATURE

A literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection, critical analysis and written description of existing information on a topic **(Polit and Hungler, 1999).**

The review of literature in this study is organized under following headings,

1. **Studies related to prevalence of HIV/AIDS**
2. **Studies related to psycho social problems and coping strategies of HIV/AIDS patients.**
3. **Studies related to Quality of life among patients with HIV on ART.**

I. STUDIES RELATED TO PREVALENCE OF HIV/AIDS

According to **WHO and UNAIDS** at the end of **2008,** 33.4 million people were living with HIV in the world. That same year, some 2.7 million people became newly infected, and 2.0 million died of AIDS, including 280000 children. Approximately 5.2 million people in low- and middle-income countries were receiving HIV antiretroviral therapy at the end of 2009.

McCurdy (2009), conducted a study on the prevalence of Human immunodeficiency virus infection and AIDS in east Africa. At present HIV infection and AIDS account for more than 50% of adult medical admissions into some of the national and provincial hospitals as well as for 10-15% of pediatric admissions. The prevalence of HIV infection currently ranges from 10-30% among adults in urban areas and from less than 1% to 25% in adults in rural areas;

since this prevalence is still rising, the full impact of the AIDS problem in east Africa is yet to be realized. While more than 80% of HIV infection in east Africa is transmitted through heterosexual intercourse, 5-15% of cases are prenatally transmitted and the remaining cases are transmitted through blood and blood products.

Tillerson (2008), conducted a study to explain racial disparities in HIV/AIDS incidence among women in the U.S. Surveillance. The data indicate that HIV incidence among Black women was more than 20 times that among White women and more than 4 times that among Hispanic women. Several studies have examined HIV risk factors by race/ethnicity including high-risk sex, drug use, inconsistent disclosure of same-sex behavior by male partners, and sexually transmitted diseases (STDs). However, some studies suggest that Black women are more likely to have risky sex partners and STDs.

Shelton, Atkinson, and Risser JM, (2008), conducted a study regarding partner violence among males that identifies the sex and relationship of their partner(s). They studied a convenience sample of 54 HIV-infected men, recruited from HIV/AIDS service organizations. Physical violence perpetrated by a primary or a casual partner was reported by 39% and 17% of the sample, respectively. Life-time forced sex by a primary or casual partner was reported by 32% and 15% of the sample, respectively. Forced sex was more commonly reported by participants who were non-white. They recommend that health care providers be aware of the high rates of intimate partner violence among men infected or at risk of infection with HIV.

Becker, (2008), conducted a study in Karnataka, Bagalkot district, a largely rural district in South India, approximately 6700 individuals aged 15-49 years were

randomly sampled from 10 villages and six towns. HIV prevalence was 2.9% overall, 2.4% in urban areas and 3.6% in rural areas [odds ratio (OR), 0.65; 95% confidence interval (CI), 0.45-0.95. Multiple sexual partners, receiving money for sex, lower education levels and a history of medical injections were significantly associated with HIV infection in that study. The study reports an overall prevalence rate of 0.468% for the year 2008.

Sheng and **Cao, (2008),** conducted a study on January 2006 to review HIV/AIDS epidemic history, current situation and prevention policy in China. 6, 50,000 people were estimated to be living with HIV in China. The overall HIV/AIDS epidemic is at a low level (0.05%) and concentrated in several at risk populations. However, the data shows that new cases of HIV infection are growing every year and spreading from at risk populations to the general population. The Chinese government has developed a series of programs with strong policy measures to stop the spread of HIV/AIDS in China.

II. STUDIES RELATED TO PSYCHO SOCIAL PROBLEMS AND COPING STRATEGIES OF HIV/AIDS PATIENTS.

Sonawat, (2009), conducted a descriptive study to assess the Psycho-social reactions and coping strategies of patients with HIV/AIDS. The study's aim was to identify the psycho-social problem faced by the HIV/AIDS patients and the mechanisms they adapt to cope with the situation. The sample size was consisted of 30 persons with HIV/AIDS from different educational and occupational background. Data collection was done by interview technique. And the result showed that, most of the patients show constructive coping with positive reinterpretation, growth and an active participation in their health programme. About 40% had accepted the

problem, were seeking advice & information regarding the disease and ventilating their feelings. However, only 2 persons showed all the 9 identified constructive coping mechanisms. Destructive coping was also observed. Mental and behavioral disengagement and denial was observed in many cases. Some continued with their alcohol/tobacco intake. And they concluded that HIV positive men, due to fear of discrimination and ridicule, lack the ability to articulate their feelings and thoughts and hence are unable to resolve their crisis.

Barungi, Kahima, Binkwija and Kasozi, (2012), conducted a study to assess psychosocial problems, stigma and attitudes towards people living with HIV/AIDS. They took 40 families and were studied for a period of 18 months. The study was done by observation, questionnaires and interviews. The study illustrates that that the AIDS is still secrete issue a taboo family members do not discuss it openly. Their psychosocial reactions range from blaming, bewilderment, anger, confusion and resentment towards patients. This culminates into dissension, self blame among family members stigmatisation, to understand, acceptance and support of the people living with HIV/AIDS. The negative reactions increase as the disease advances. The counsellors' supportive role is paramount but not adequate. The study highlighted the need for more care focused community initiated interventions and intensive education programs to supplement the counsellors role in reducing psychosocial problems and stigma.

Orban, et.al, (2010), conducted a descriptive study to investigate the coping strategies of twenty five HIV-positive Caribbean people using in-depth interview and the purposive sampling technique was used. They concluded that the main coping strategies were more cognitive than behavioral: restricted disclosure, submersion, faith, and positive reappraisal. The strategies were intertwined in

complex ways, and most of which were rooted in contextual factors, particularly cultural ones. They recommended that the HIV-positive Caribbean people who were coping well could serve as mentors and role models for poor copers and newly diagnosed patients; establishing Caribbean-specific support groups would also assist coping.

Michaud, (2010), conducted a descriptive study to assess the Coping strategies of adolescents living with HIV**.** Data were analyzed from 166 adolescents infected with HIV in three major US cities. Participants identified HIV-related stressors during a face-to-face interview. The result showed that the Youth with moderately advanced disease (CD4 200-500 cells/mm(3)) used a Passive Coping style more often than healthier youth (CD4 > 500 cells/mm(3)). Additionally, Passive Coping was associated with greater emotional and behavioral problems. Youth infected with HIV may benefit from interventions promoting adaptive coping responses to HIV-specific stressors, particularly medication adherence.

Townsend, (2009), conducted a Study qualitative study to assess Coping with an HIV infection among HIV- positive adolescents. In this, twenty-nine HIV-positive adolescents aged 13 to 20 years (22 girls), who lived in Switzerland, were attended semi-structured interview to describe their perceptions and experiences with the disease itself and with therapeutic adherence. While younger adolescents most often thought of their disease as fate, older adolescents usually knew that they had received it through vertical transmission.. Based on their attending physician's assessment, 18 subjects were judged highly adherent, 4 fairly and 7 poorly adherent. High adherence appeared linked with adequate psychological adjustment and effective coping mechanisms, as well as with the discussion and adoption of explicit medication-taking strategies.

Li Li and Sheng Wu, (2006), conducted a Study to Understand Family Support for People Living with HIV/AIDS in Yunnan, China that examined how family support affects people living with HIV/AIDS (PLHA) in China. In-depth, semi-structured interviews (*n*=30) were conducted with people living with HIV/AIDS who were infected through different routes (e.g., intravenous drug use, sex) and of different age groups. Findings showed that all of the participants were in great need of help and the primary source of support came from their families. Family support included financial assistance, support in the disclosure process, daily routine activities, medical assistance, or psychological support. This study illustrates that the support provided by family made multiple levels of positive impact on people living with HIV/AIDS, suggesting the importance of including families in HIV/AIDS interventions.

III. STUDIES RELATED TO QUALITY OF LIFE AMONG PATIENTS WITH HIV/ AIDS ON ART

Naveet Wig, Raja Lekshmi, Hemraj Pal, Vivek Ahuja, Chander Mohan Mittal, and Sunil Kumar Agarwa, **(2006),** conducted a cross sectional study to determine the impact of Human Deficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) on the quality of life (QOL) among 68 patients in North India. QOL was evaluated using the WHOQOL-Bref (Hindi) instrument. One way Analysis of Variance (ANOVA) was performed to find out significant difference between the clinical categories and socio-demographic variables on QOL domains. The overall QOL mean score on a scale of 0-100 was found to be 25.8. Similarly, on the scale of 0-100 the mean scores in the four domains of QOL in descending order were social (80.9); psychological (27.5); physical (17.7) and environmental domain (11.65). There

was a significant difference of quality of life in the physical domain between asymptomatic patients (14.6) and patients with AIDS (10.43) defining illnesses ($p<0.001$) and asymptomatic and early symptomatic (12) patients ($p=0.014$). QOL in the psychological domain was significantly poorer in early symptomatic (12.1) ($p<0.05$) and AIDS patients (12.4) ($p<0.006$) as compared to asymptomatic individuals (14.2). A significant difference in QOL scores in the psychological domain was observed with respect to the educational status ($p<0.037$) and income of patients ($p<0.048$). Significantly better QOL scores in the physical ($p<0.040$) and environmental domain ($p<0.017$) were present with respect to the occupation of the patients. Patients with family support had better QOL scores in environmental domain. QOL was associated with education, income, occupation, family support and clinical categories of the patients.

Deepika Anand, Seema Pur and Minnie Mathew, (2012), conducted a study to evaluate the quality of life (QOL) of people living with HIV/AIDS (PLHIV) receiving ART and its association with Body mass index (BMI) and CD4 count. An observational study was performed on PLHIV receiving ART in Orissa, India. Data on sociodemographic profile, BMI, and CD4 were gathered from 153 HIV-positive subjects. QOL was assessed using WHOQOL-HIV BREF scale. The overall QOL score of the subjects was moderate; PLHIV with lower BMI also had poorer QOL ($P<0.05$). Employment affected only the social health domain of the subjects. Men reported poorer level of independence and physical health while women reported poorer social relationships and environment. All the six domains correlated significantly with the overall QOL.

Duo Shan, et.al., (2011), conducted a study to describe the quality of life and related factors in HIV-positive spouses undergoing ART from discordant couples. A

cross-sectional study was conducted among 1,009 HIV-positive spouses from serodiscordant couples in Zhumadian, Henan Province, between October 1, 2008 and March 31, 2009. HIV-positive spouses were interviewed by local health professionals. Quality of life was evaluated by WHOQOL (Chinese Version). A multiple linear regression model was used to analyze the related factors. The majority of subjects were female (56.39%), had received a high school education (44%), were of Han ethnicity (98.41%), and were farmers (90.09%); the median time period of receiving ART was 3.92 years. The physical, psychological, social, and environmental QOL scores of the subjects were 12.91±1.95, 12.35±1.80, 13.96±2.43, and 12.45±1.91 respectively. The multiple linear regression model identified the physical domain related factors to be CD4 count, educational level, and occupation; psychological domain related factors included age, educational level, and reported STD symptom; social domain related factors included education level; and environmental domain related factors included education level, reported STD symptoms, and occupation. Being younger, a farmer, had a lower level of education, a reported STD symptom, or lower CD4 count, could decrease one's quality of life, suggesting that the use of blanket ART programs alone may not necessarily improve quality of life. Subjects received lower scores in the psychological domain, suggesting that psychological intervention may also need to be strengthened.

KH Rajeev, Yuvaraj, Nagendra Gowda, Ravikumar, (2012), conducted a cross sectional study to assess the Quality of life of PLHA in relation to various socio-demographic and clinical correlates in a community care center at Chitradurga district. About 395 PLHAs registered in the centre constituted the sample. WHOQOL - 120 instrument was used for assessing quality of life. The socio demographic factors were also obtained in pre designed proforma. Statistical Analysis Used: Proportions, Mean,

Std deviation, One way Analysis of Variance (ANOVA). The Quality of Life scores for all domains were intermediate for the PLHAs between (10 - 14). The mean scores were highest for psychological domain. There was a significant difference in QOL of PLHA who were on ART and Not on ART in some domains. PLHAs who were literates, married, Single, employed, income more than 1500 not on ART, CD4 count more than 200, earlier stages of HIV, living with spouse and students had high mean scores. Mean difference of QOL scores with duration of ART intake were statistically significant in psychological and Spirituality domains. QOL was found to be determined by education, income, occupation, ART status, duration of taking ART and clinical categories of the disease.

Harminder Singh, (2013), conducted a study to correlate the relationship of quality of life with successful highly active antiretroviral therapy among patients with human immune deficiency virus-infected patients on highly active anti-retroviral therapy regimen in tribal region of Chhattisgarh. Health-related quality of life was assessed using, the Medical Outcomes Survey Short Form 36. Physical health summary scores and mental health summary scores were compared of pre-Highly Active Anti-Retroviral Therapy (at baseline) and post 12 months of therapy. The increase in CD4 cell counts was extremely significant ($P < 0.0001$). The Physical Composite Summary (P value = 0.0003) improved significantly, whereas the Mental Composite Summary (with a baseline value of 40.7), post 12 months, was calculated as 42.8 (P value = 0.2371) and was statistically not significant. They concluded that efficacy measurement is the key ingredient of highly active anti-retroviral therapy, which must also include assessment of health-related quality of life to maximize the holistic approach towards disease.

Susan Herrmann1, et.al., (2013), carried out a secondary analysis of data from Australian patients who participated in the international study: 15 in-depth interviews were conducted and 102 QQL surveys using the QOL-HIV instrument and a symptom questionnaire were administered. The researchers employed qualitative methods to extract description from the interview data and linear regression for exploration of the composite and sub-scale scores derived from the survey. Interviews revealed the long-standing difficulties of living with HIV, particularly in the domains of intimate relationships, perceived stigma, and chronic ill health. The novel QOL-HIV instrument discriminated impact of treatment via symptomatology, pill burden and treatment duration. Patients demonstrated lower RQL if they were: newly diagnosed ($p=0.001$); naive to anti-retroviral treatment ($p=0.009$); reporting depression, unemployment or a high frequency of adverse symptoms, (all $p<0.001$).

Jin, Yantao and Liu, et.al., (2014), conducted cohort studies to analyze changes in the quality of life of people living with HIV/AIDS. They searched the PubMed and EmBase databases from inception to December 2012 for primary cohort studies of the quality of life of people living with HIV/AIDS after combination antiretroviral therapy (cART). Two independent reviewers screened and selected published studies of quality of life that had been followed up for more than 12 weeks after the beginning of cART. Eight cohort studies were found: only four were assessed as high quality and four were assessed as moderate quality. None of the studies described patient selection. Six studies followed the patients for one year or more, and the other studies for less than 6 months. Seven studies reported quality of life had been improved after initiation of cART, and one study reported no change. Previous research suggested that cART improved the quality of life of AIDS patients for a limited time, so further research for longer periods is needed to confirm this outcome.

So, from the above literature review it can be concluded that, people with HIV can live full and healthy lives if they take care of them selves and access treatment. Comprehensive care and support to PLHIV helps them to improve their quality of life.

CHAPTER – III

RESEARCH METHODOLOGY

The methodology of the research indicates that general pattern of organizing the procedure for gathering valid and reliable data for the problem under investigation,**(Kothari, 1996).**

This chapter includes the description of research approach, research design, setting of the study, variables, sample, sample size, sampling technique, and criteria for sample selection, development and description of the tool, validity and reliability of the tool, method of data collection, procedure and plan for data analysis and interpretation of the data.

Research Approach

The research approach is the most essential part of any research. The outcome of the entire study is based on the plan of it. In this study, the Quantitative survey approach is used.

Research Design

Ram Ahuja (2007), stated that research design is a master plan specifying the method and procedure for collecting and analysing the needed information.

Research design is the over all plan for addressing a research question including specifications for enhancing the studies integrity. **(Polit, 2011).**

The **descriptive comparative design** is adopted for the study.

Setting of the study

Research settings are specific places in a research, where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study and permission of authorities. **(Polit and Hungler, 2004)**

The study has been conducted in a non-governmental organization HIV/AIDS care centre, Madurai. It is about 3kms away from Sacred Heart Nursing College. It covers about 3500 population and nearly 5 to 7 patients visit each day. The working hours of this centre was between 10am to 5pm and it was functioning for 6 days a week nearly 8 members were working in this centre (managing, direction co-ordination, counselor and health worker) HIV/AIDS patients was referred to the centre by the ART medical officer. The services rendered are nutritional support, counseling service, financial support, legal counseling, home visits and free education for children of HIV/AIDS patient.

Variables

A Concept which can take different qualitative values is called as variable. **(Kothari C.R, 2012)**

The research variable used for the present study is Quality of life among HIV/AIDS patients on ART.

STUDY POPULATION:

According to **Polit and Beck (2012),** population refers to aggregate or totality of all the subjects or numbers that confirmed to a set of specification.

The target population of the study was patients with HIV/AIDS receiving ART attending selected Non Governmental Organization, Madurai.

SAMPLE:

According to **Polit and Hungler (2012),** a sample is a subset of population and selected to participate in research study, it is a portion of the population which represents the entire population.

In this study the sample are the HIV/AIDS patients on ART who fit into inclusion criteria.

SAMPLE SIZE:

Sample size is normally decided by nature of the study, nature of population, type of sampling technique, total variables, statistical test adopted for analysis, sensitivity of the measures and addition, **(Polit and hungler, 2012)**

The sample size was 60 subjects with HIV/AIDS on ART. Among that 30 were female and remaining 30 were male samples.

SAMPLING TECHNIQUE:

Sampling technique refers to the process of selecting the portion of population to represent the entire sample, **(Polit and Beck, 2012)**

Convenience sampling technique was adopted to conduct the study. It is a type of non-probability sampling method with refers to the selection of the most readily available persons as participants in a study also called accidental sampling. **(Polit, 2011).**

CRITERIA FOR SAMPLE SELECTION:

Inclusion Criteria:

1. Patients >18yrs of age diagnosed to be HIV/AIDS receiving ART under national AIDS control association from selected Non Governmental Organization, Madurai.
2. Both male and female patient
3. Patients who can and speak Tamil or English.
4. The patients who were present during the period of data collection
5. The patients who were willing to give consent participate in the study.

Exclusion Criteria:

1. Subjects with severe opportunistic infection
2. Critically ill.

RESEARCH TOOLS AND TECHNIQUE:

The tool act as an instrument to assess and collect the data from the respondent of the study, **(Polit and Beck, 2012)**

The tool has 3 sections. They are;

Part: 1

Demographic variable include:

Age, sex, education, occupation, income, marital status, place of residence.

Part: 2

Clinical profiles

Duration of illness, history of opportunistic infection, onset of ART initiation, CD4 count, Drug Name, BMI.

Part: 3

This part consist of WHO QOL-HIV BRIEF SCALE which is down loaded from online which was used in many studies.

This tool contains 6 domains which is 5 point Likert type scale. The items are rated as not at all, a little, a moderate amount, very much and extreme amount. Total score for the scale is 155. The following domains were included.

Domain (i) - contains physical related questions

Domain (ii) - contains psychological related questioners

Domain (iii) - contains level of independence related questioners

Domain (iv) - contains social relations related questioners

Domain (v) - contains environment related questioners

Domain (vi) - contains spiritual related questioners

Domain (vii) - contains QOL and general health

SCORING PROCEDURE:

The tool consists of total 31 questions under seven domains with five point Likert type scale. A score of 1 was given to very poor symptom and score of 5 was given to good quality of life.

S.No	Items	Number of Items
	Physical Domain	4
	Psycho social Domain	5
	Level of dependency	4
	Social relations	4
	Environment	8
	Spiritual domain	4
	General health domain	2

The total quality of the score of the entire domain is 155. The scoring procedure for WHI QOL HIV Brief scale were arbitrarily grouped in to five groups as given below.

Content	Score	Percentage
Very good QOL	125-155	81 - 100%
Good QOL	94-124	61 - 80%
Moderate QOL	63-93	41 - 60%
Poor QOL	32-62	21 - 40%
Very poor QOL	1-31	17 - 20%

Pilot study:

Pilot study was conducted a week before the actual study in an nongovernmental organization HIV/AIDS centre in Madurai to test the feasibility, relevance and practicability of the study. Data were analyzed to find out the suitability of statistical method. The pilot study samples were not included in original study.

Plan for data analysis:

- To assess the range of QOL life in male and female HIV/AIDS infected patients on ART by using frequency and percentage, mean, standard deviation, mean percentage.
- To compare the range of QOL life in male and female HIV/AIDS infected patients on ART by using Karl Pearson's Correlation co-efficient were used to determine the relationship between quality of life among HIV/AIDS infected patient.
- To find out the association between the quality of life of male and female patients affected with HIV/AIDS on ART with their selected demographic variables by using chi-square.

Validity:

In present study investigator checked validity of the tool by submitting the tool to 7 experts, among them 3 in the field of medicine, one is the bio-statistician and 3 experts in the field of nursing based on their suggestion tool was reformed.

Reliability:

Split half method was used to check the reliability of the tool to find out the reliability and obtained value of $r = 0.86$ which was highly reliable.

Data collection procedure:

Permission was sought from the dissertation committee of SHNC and concern authority of Non Governmental Organization in Madurai. The subject was explained about freedom to with draw from the study any time if they wishes. WHO QOL HIV brief questionnaire was explained and assurance regarding confidentiality of the answer

will be given. Approximately 30mts was taken to complete the questionnaire among each subject. Additional information regarding each questions and doubts was clarified after the completion of the interview.

Protection from human rights

Informed written consent was obtained from the study samples before starting data collection. Assurance was given and confidentiality was maintained. The subjects were explained that they have rights to with draw from the study. There was absence of physical and psychological strain to study subjects.

CHAPTER – IV
ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the description of samples, classification, analysis, and interpretation of data collected to evaluate the achievement of the objectives of the study and discussion of the study findings, the data is tabulated and described as follows.

Presentation of the findings of the study

Section I:

1. Frequency and distribution of subjects with regard to the selected demographic variables.
2. Frequency and percentage distribution of the subject with regard to selected clinical profiles.

Section II:

1. Distribution of subjects according to the level of QOL among male and female HIV patients on ART.
2. Frequency and percentage distribution of subjects on the basis of quality of life in various domains

Section III:

1. Comparison of mean and SD of male and female HIV patients on ART
2. Unpaired t value of male and female HIV patients on ART

3. Association between the QOL scores and gender among HIV infected persons on ART

Section IV:

1. Correlation between different domains of quality of life among males affected with HIV/AIDS on ART
2. Correlation between different domains of quality of life among males affected with HIV/AIDS on ART

Section V:

1. Association between the quality of life of male patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles.

2. Association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles

SECTION I

Demographic variables of the samples

This section deals with the demographic variables of the subjects such as age, Education, Occupation, Marital status, place of residency, Religion, Type of family and food habits.

Table 1: Frequency and distribution of samples with regard to the selected demographic variables.

N = 60

Demographic variables	Males (n = 30)		Females (n = 30)		Total	
	F	%	F	%	F	%
Age						
20 - 30 yrs	6	20	7	23	13	22
31 - 40 yrs	12	40	12	40	24	40
41 - 50 yrs	12	40	11	37	23	38
Education						
Illetrate	6	20	4	13	10	17
Primary	13	43	14	47	27	45
Higher secondary	11	37	12	40	23	38
Occupation						
Unemployed	12	40	5	17	17	29
Coolie	15	50	14	47	29	48
Business	3	10	11	36	14	23

Marital status						
Single	8	27	11	37	19	32
Married	16	53	16	53	32	53
Divorced	6	20	3	10	9	15
Place of residency						
Urban	13	43	16	53	29	48
Rural	17	57	14	47	31	52
Religion						
Hindu	12	40	15	50	27	45
Muslim	6	20	5	17	11	18
Christian	12	40	10	33	22	37
Type of family						
Nuclear family	17	57	18	60	35	58
Joint family	8	26	7	23	15	25
Extended family	5	17	5	17	10	17
Food habits						
Vegetarian	10	33	8	27	18	30
Non vegetarian	20	67	22	73	42	70

- With regard to age in males 12 (40%) samples were 31 - 40 years and 41 – 50 years, and in females 12 (40%) samples were in the age group of 31 – 40 years.
- Regarding education in males 13 (43%) samples were completed primary education, and in females 14 (47%) samples were completed primary education.
- With regard to occupation half of samples 15 (53.3%) were coolie in males and in females majority of sample were coolie 14 (47%) respectively.
- Regarding marital status in males 16 (53%) samples were married and in females 16 (53%) were married .

- With regard to place of residency, in males 17(57%) were living in rural and in females 16 (53%) were living in urban.
- Regarding religion, in males 12 (40%) were Hindus and Christians and in females 15 (50%) were Hindus
- With regard to type of family, most of the males (57%) were living in nuclear family and in females 18 (60%) were living in nuclear family.
- Regarding food habits, 20 (67%) males were non vegetarian and 22 (73%) females were non vegetarian.

Table 2: Frequency and percentage distribution of the samples with regard to selected clinical profiles.

N = 60

Clinical profile	Male (n=30)		Female (n= 30)		Total	
	F	**%**	**f**	**%**	**f**	**%**
Duration of illness						
< 5 yrs						
5 - 10 yrs	5	17	12	40%	17	28%
> 10 yrs	14	47	15	50%	29	48%
	11	36	3	10%	14	24%
History of opportunistic infection						
Yes						
No	16	53	12	40	28	47
	14	47	18	60	32	53
Onset of ART initiation						
< 3 yrs						
3 - 5 yrs	11	37	8	27	19	32
> 5 yrs	16	53	16	53	32	53
	3	10	6	20	9	15
CD4 count (cells/ µl)						
<200	6	20	8	27	14	24
200 - 300	11	37	9	30	20	33
>300	13	43	13	43	26	43
BMI						
< 24	6	20	8	27	14	23
24 - 28	18	60	16	53	34	57
>28	6	20	6	20	12	20

- Regarding to duration of illness, both males 14 (47%) and females15 (50%) were found to have HIV for 5years - 10 years .
- Regarding history of opportunistic infection, 16(53%) of males are having opportunistic infection and 18 (60%) of females are not having history of opportunistic infection.
- With regard to ART initiation, half of the samples in both group 16 (53%) were under ART treatment for 3 – 5 years.
- With regard to CD4 count 13 (43%) of males were having CD4 count >300 cells/ µl and 13 (43%) females were having CD4 count > 300 cells/ µl .
- With regard to BMI, 18 (60%) of males were having BMI of 24 – 28 and 16 (53%) of females were having BMI of 24 – 28.

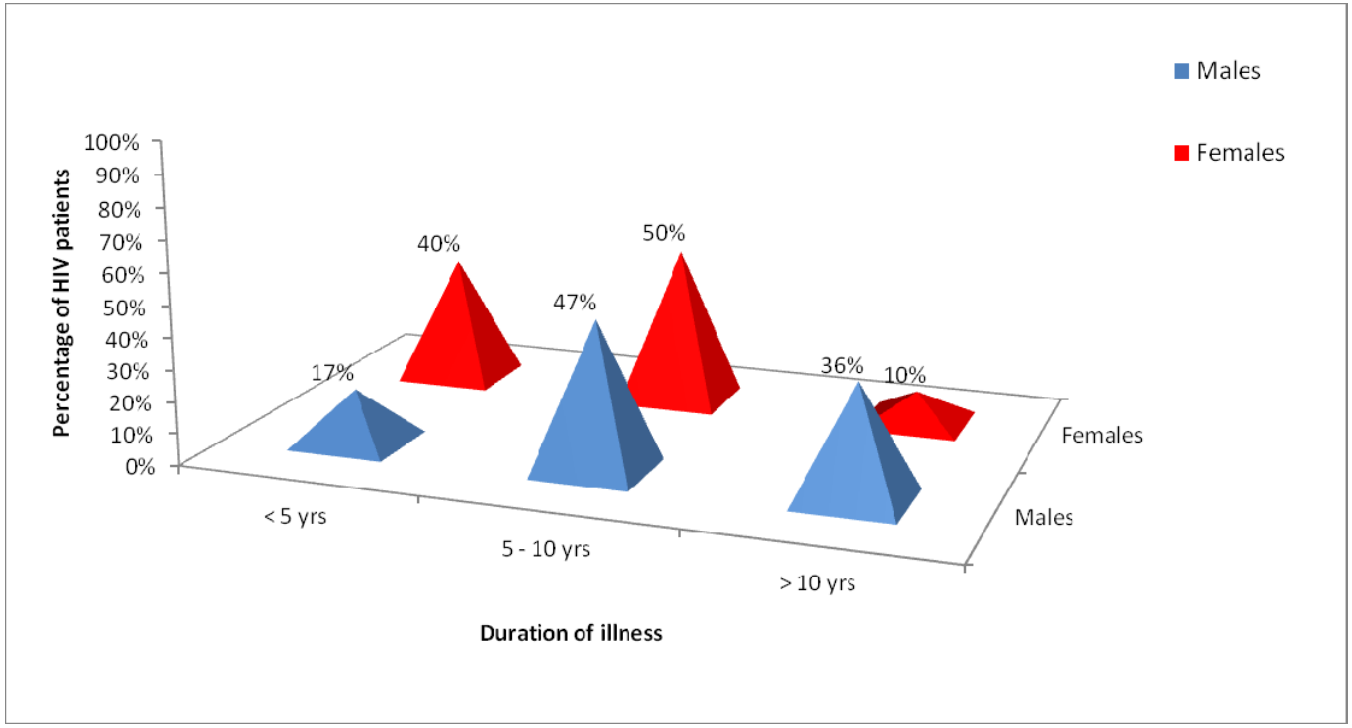

Figure 2. The pyramid diagram showing the percentage distribution of subjects according to duration of illness.

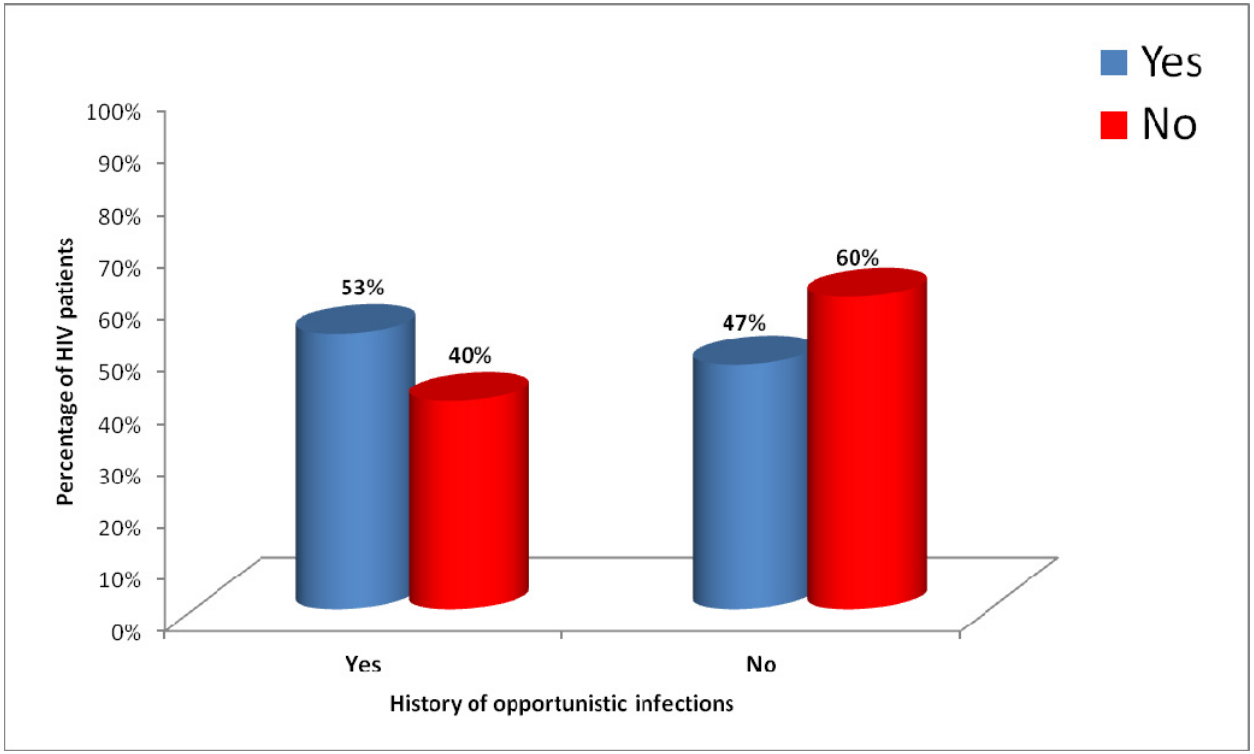

Figure 3. The cylinder diagram showing the percentage distribution of subjects according to history of opportunistic infections

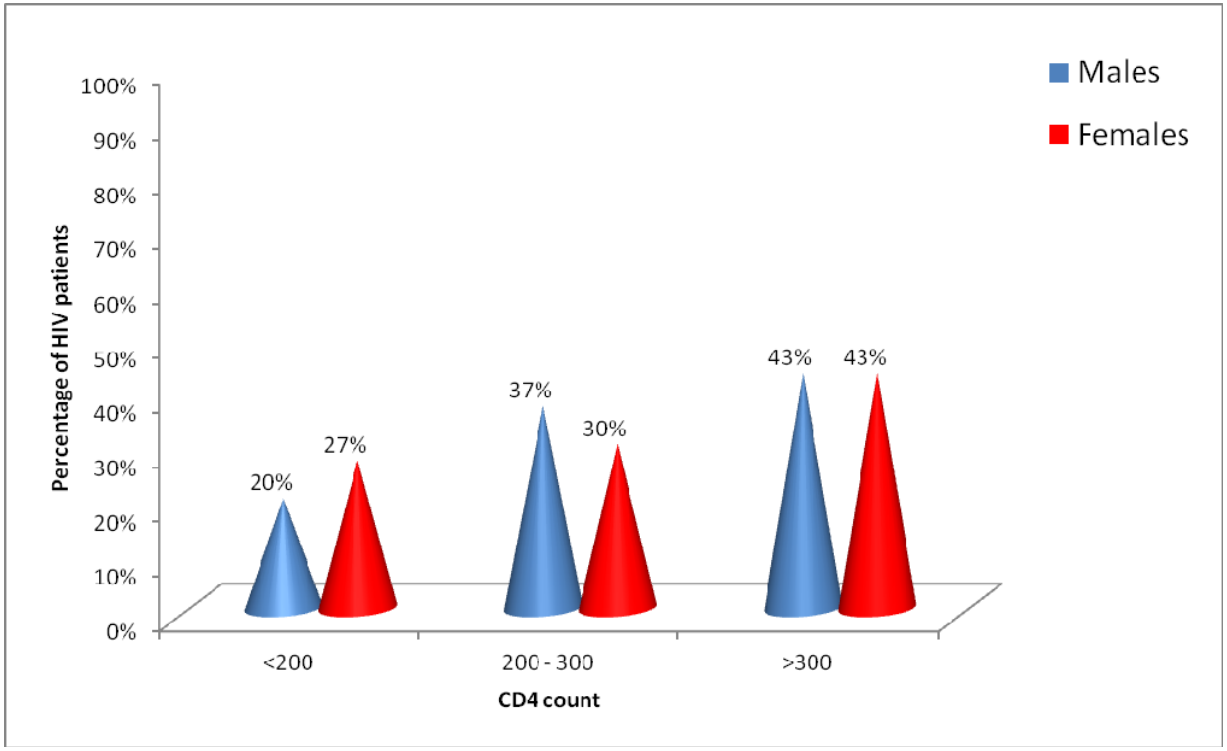

Figure 4. The cone diagram showing the percentage distribution of subjects according to their CD4 count

SECTION II

This section deals with the

- Distribution of subjects according to the level of QOL among male and female HIV patients.
- Frequency and percentage distribution of subjects on the basis of quality of life in various domains

Table 3: Distribution of subjects according to the level of QOL among male and female HIV patients: N = 60

Content	Total Score	Male (n=30)		Female (n=30)		Total	
		F	**%**	**f**	**%**	**F**	%
Very good QOL	125-155	0	0	0	0	0	0
Good QOL	94-124	28	93.3	9	30	37	61.7
Moderate QOL	63-93	2	6.7	21	70	23	38.3
Poor QOL	32-62	0	0	0	0	0	0
Very poor QOL	1-31	0	0	0	0	0	0

Data on table 3 are based on the level of quality of life expressed by the male and female patients on ART. The subjects were classified into 5 groups orbitrarily based on their total score obtained in WHO QOL – HIV Brief scale as follows Very good QOL (125 – 155) , Good QOL (94 -124) , moderate QOL (63 – 93) , poor QOL (32- 62) and very poor QOL (1 – 31).

In males and females (0%) none of them had very good QOL , poor QOL and very poor QOL. In males 28 (93.3%) of subjects were having good quality of life and 2 (6.7%) of subjects were having moderate QOL .

In females 9 (30%) of subjects having good QOL and 21 (70%) of subjects were having moderate QOL.

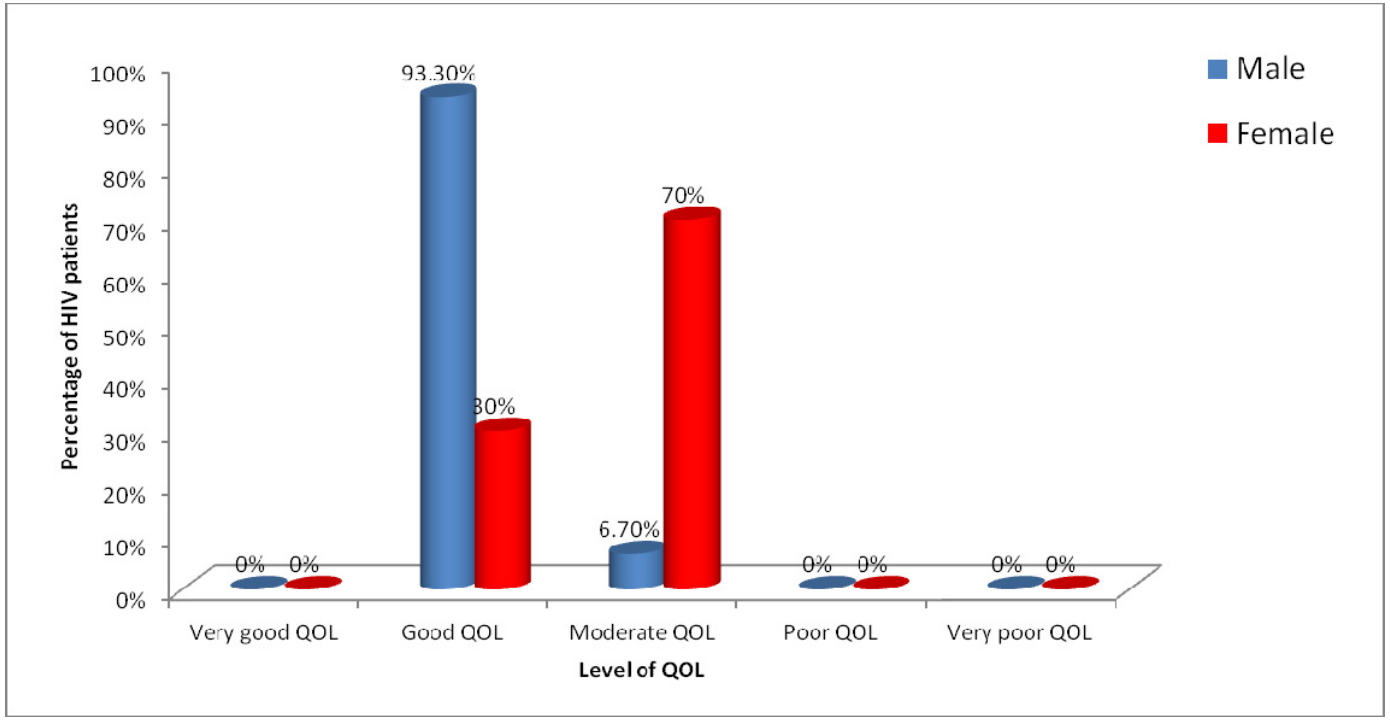

Figure 5. The cylinder diagram showing the percentage distribution of subjects according to the level of quality of life

Table 4. Frequency and percentage distribution of subjects on the basis of quality of life in various domains

(N=60)

QOL domains	Very good QOL				Good QOL				Moderate QOL				Poor QOL				Very poor QOL			
	Males		Females		Males		Females		Males		Females		Males		Females		Males		Females	
	F	%	f	%	F	%	F	%	f	%	f	%	f	%	f	%	f	%	f	%
Physical Domain	1	3	0	0	18	60	6	20	9	30	16	53	2	7	6	20	0	0	2	7
Psychological domain	0	0	0	0	16	53	8	27	12	40	16	53	2	7	4	13	0	0	2	7
Level of dependency	1	3	0	0	15	50	6	20	11	37	20	67	3	10	2	7	0	0	2	7
Social relations	0	0	0	0	16	53	7	23	10	33	16	53	3	10	4	13	1	3	3	10
Environment	2	7	1	3	18	60	5	17	12	40	17	57	6	20	5	17	1	3	2	7
Spiritual domain	1	3	0	0	15	50	6	20	12	40	18	60	1	3	5	17	1	3	1	3
General health Domain	2	7	1	3	15	50	7	23	11	37	16	53	2	7	5	17	0	0	1	3

Data on table 4 are based on the basis of quality of life in various domains.

As per table 4

- In males 18 (60%) subjects were having good QOL in physical domain whereas in females 16 (53%) subjects were having moderate QOL in physical domain.
- Regarding psychological domain, there was an equal distribution of 16 (53%0 males and females were found to have good QOL.
- In males 15 (50%) subjects were having good QOL in level of dependency domain whereas in females 20 (66%) subjects were having moderate QOL in dependency domain.
- In males 16 (53%) subjects were having good QOL in social relations domain whereas in females the same 16 (53%) subjects were having moderate QOL in social relations domain.
- In males 18 (60%) subjects were having good QOL in environmental domain whereas in females 17 (57%) subjects were having moderate QOL in environmental domain.
- In males 15 (60%) subjects were having good QOL in spiritual domain whereas in females 18 (60%) subjects were having moderate QOL in spiritual domain.
- In males 15 (60%) subjects were having good QOL in general health domain whereas in females 16 (53%) subjects were having moderate QOL in general health domain

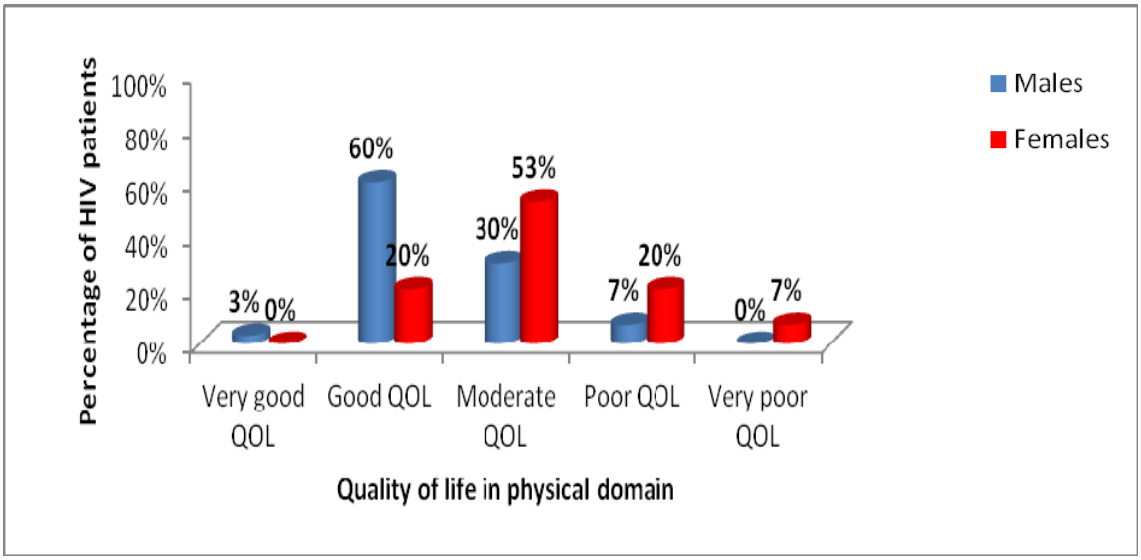

Figure 6. The cylinder diagram showing the percentage distribution of subjects according to level of quality of life in physical domain

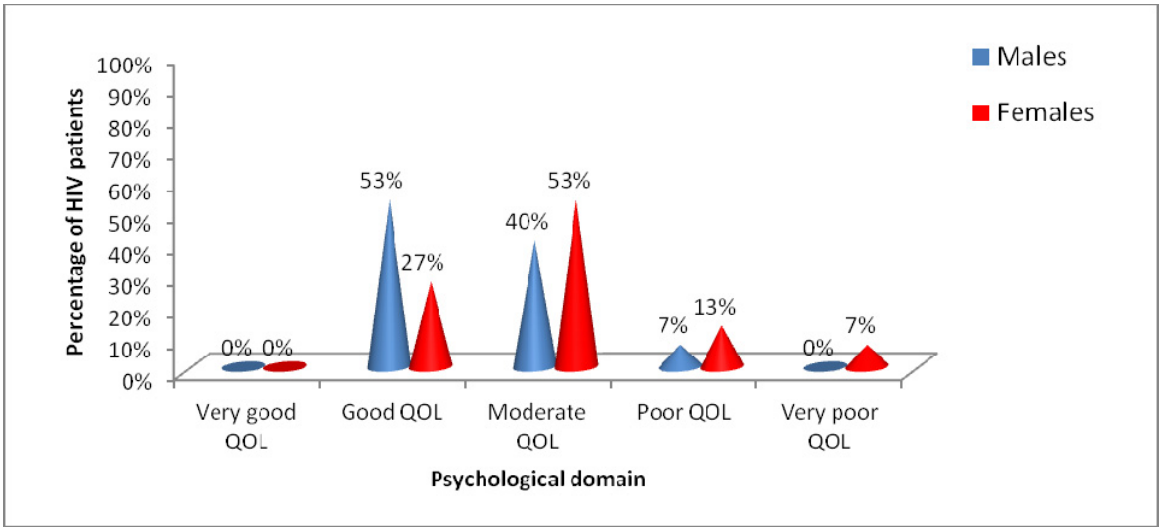

Figure 7. The cone diagram showing the percentage distribution of subjects according to level of quality of life in psychological domain

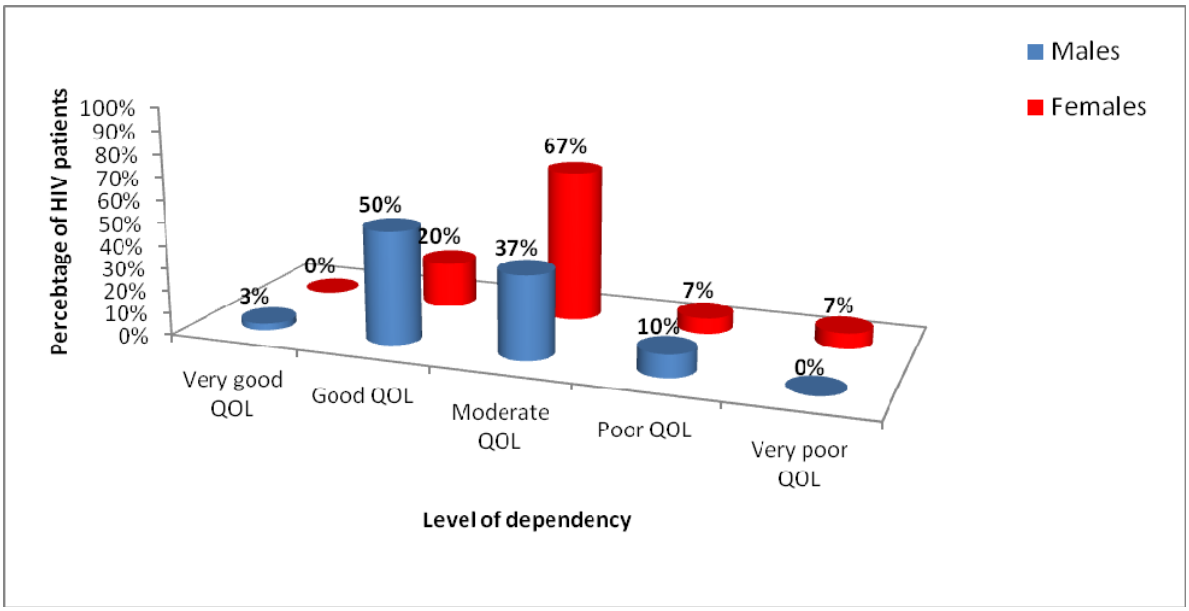

Figure 8. The cylinder diagram showing the percentage distribution of subjects according to level of quality of life in level of dependency

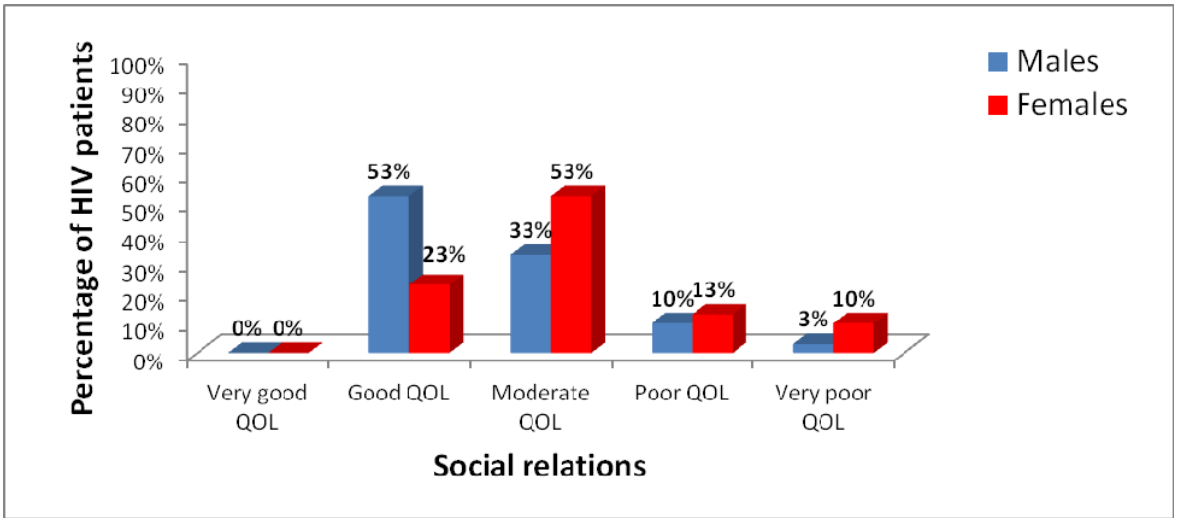

Figure 9. The bar diagram showing the percentage distribution of subjects according to level of quality of life in social relations domain

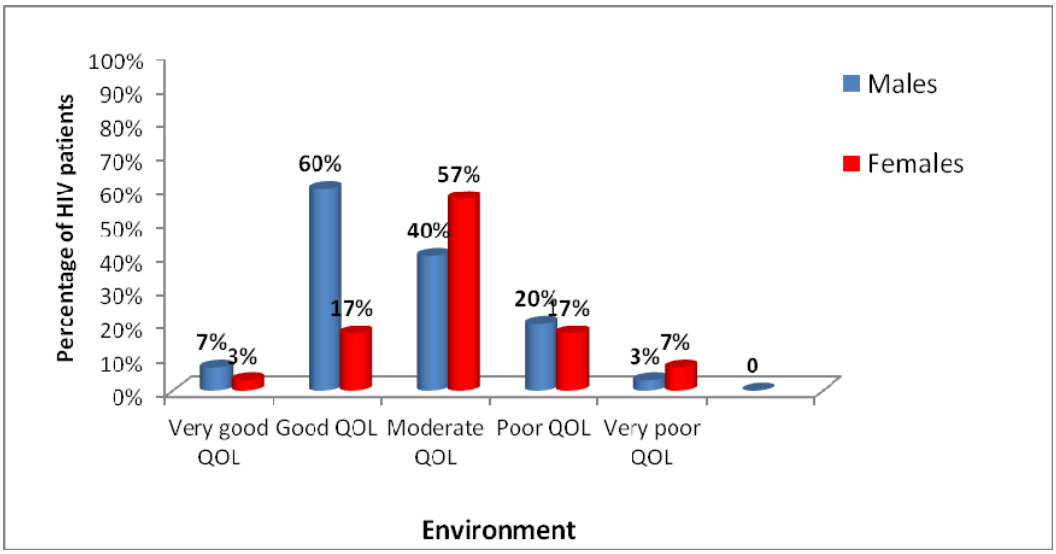

Figure 10. The cylinder diagram showing the percentage distribution of subjects according to level of quality of life in environmental domain

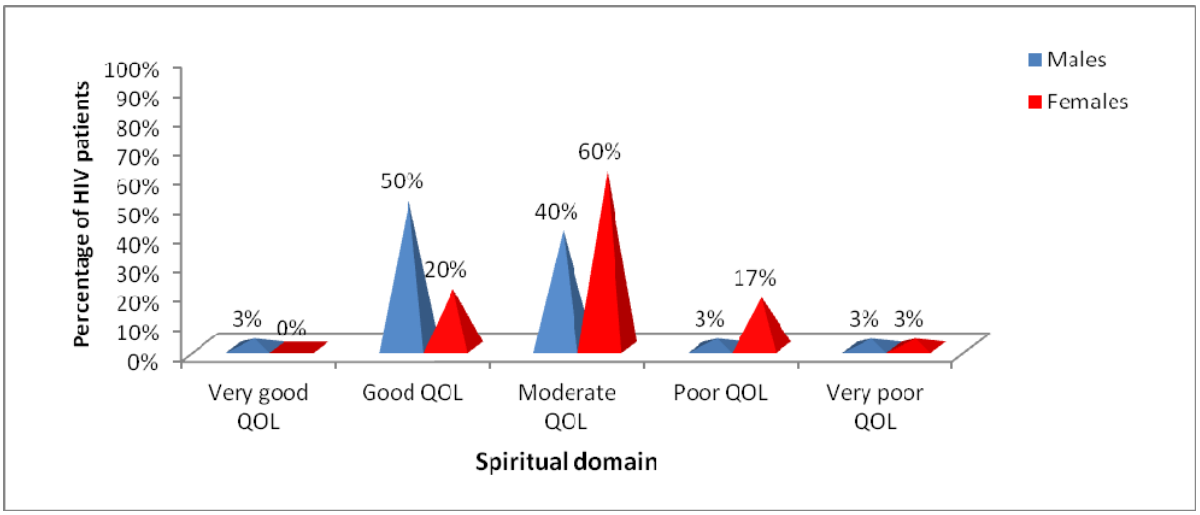

Figure 11. The pyramid diagram showing the percentage distribution of subjects according to level of quality of life in spiritual domain

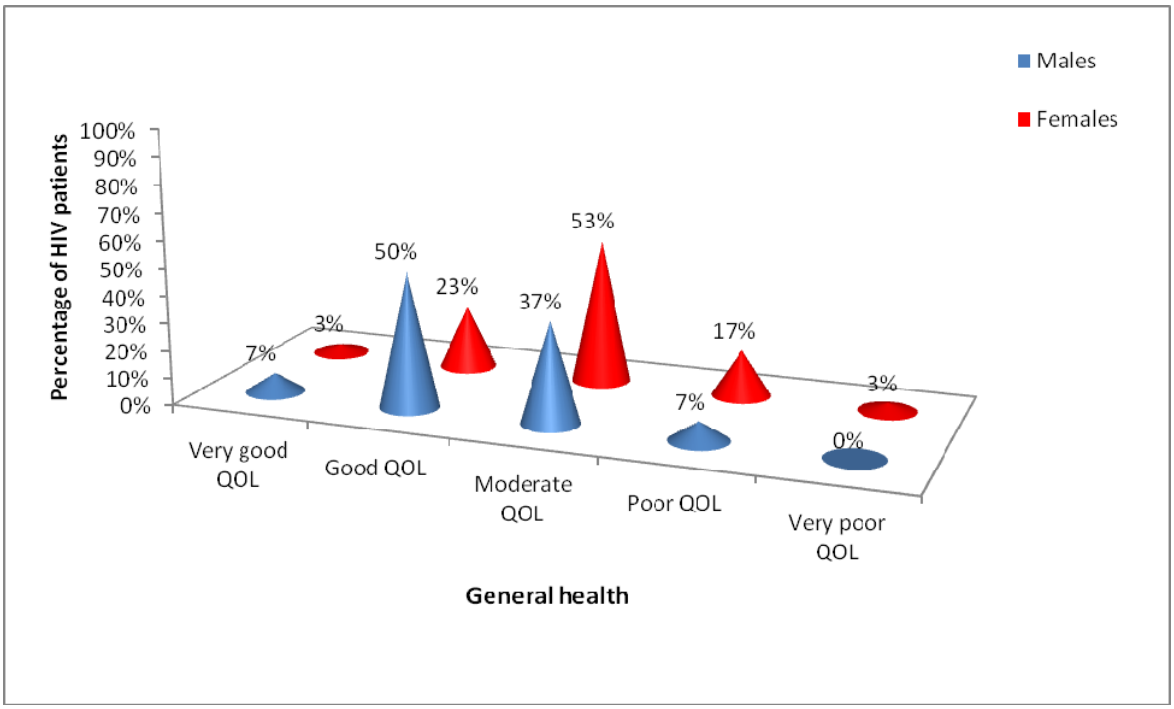

Figure 12. The cone diagram showing the percentage distribution of subjects according to level of quality of life in general health domain

Section III

This section deals with comparison of mean QOL between male and female patients affected with HIV/AIDS who are on Anti Retro Viral Therapy (ART).

Table 5: Comparison of mean and SD of male and female patients on ART

(N = 60)

Group	N	Mean	SD	t - Test	Df
Male	30	102	6.17		
				6.34*	58
Female	30	92	6.07		

*Significant at 0.05 level.

To find out if there is any difference between the mean QOL among male and female patients who were on ART. The null hypothesis was stated as follows.

H01:

There will be no significant difference between the QOL among male and female patients affected with HIV /AIDS receiving ART.

Table 5 shows that in male HIV patients the mean QOL score is 102 and the female HIV patients the mean QOL score is 92, which is lower than the male HIV patients the mean QOL score. The standard deviation of male HIV patients is 6.17 and the standard deviation female HIV patients is 6.07. The unpaired 't' value is 6.34 is statistically significant at 0.05 level. This indicates that the mean difference of 10 score of QOL was a true difference and had not occurred by chance. So the researcher is accepting research hypothesis and rejects the null hypothesis.

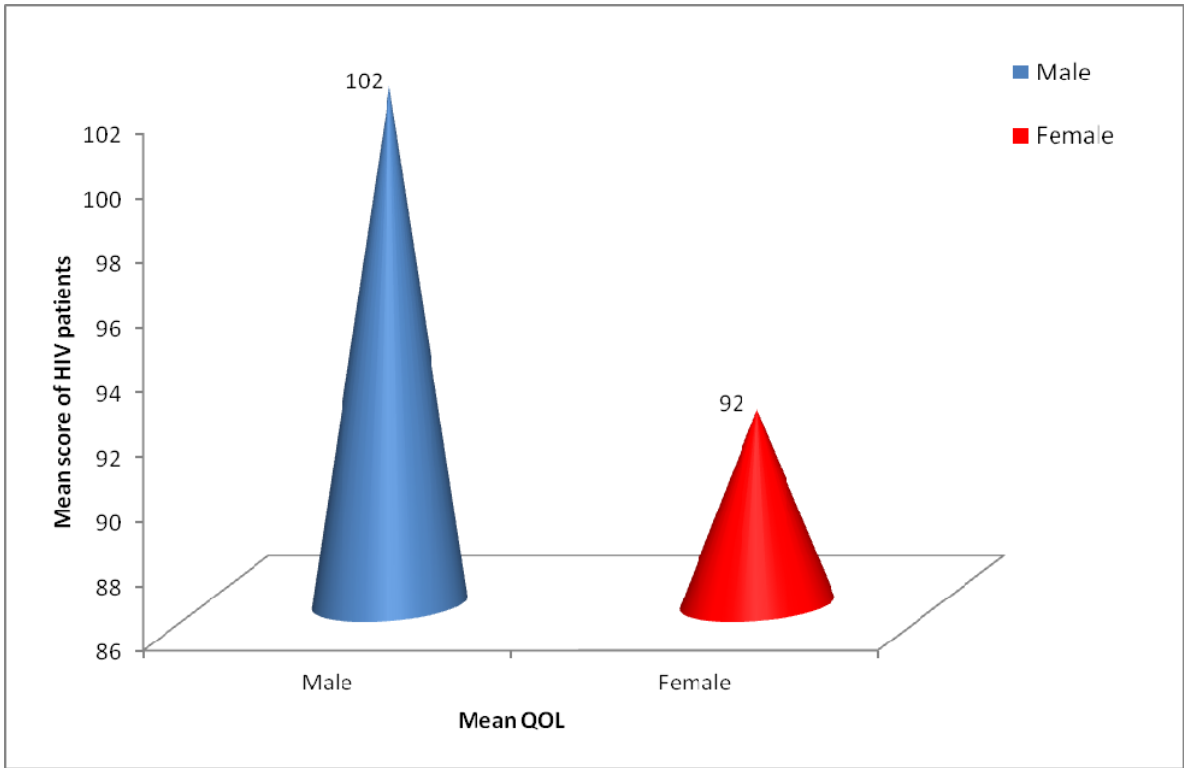

Figure 13. The cone diagram showing the mean QOL scores of male and female HIV patients on ART

Table 6: Association between the QOL scores and gender among HIV infected persons on ART.

(N=60)

HIV patients	Above mean	Below Mean	$\chi 2$ value	Df
Male	1	21	28.7	1
Female	21	9		

*Significant at 0.05 level.

Regarding the association between the QOL score of subjects and their gender, the obtained chi-square value of 28.7 at df 1 (3.84) was significant at ($P<0.05$) level. This indicates that the association between the QOL score and gender.

SECTION IV

Table 7. Correlation between different domains of QOL scores of male patients

(N=30)

QOL domains	**Physical Domain**	**Psychological domain**	**Level of dependency**	**Social relations**	**Environment**	**Spiritual domain**	**General health domain**
Physical Domain	-	0.81*	-	0.54*	-	0.64*	-
Psychological domain	-	-	0.38*	-	0.63*	-	0.53*
Level of dependency	0.62*	-	-	0.47*	-	0.45*	-
Social relations	-	0.57*	-	-	0.43*	-	0.29*
Environment	0.43*	-	0.59*	-	-	0.56*	-
Spiritual domain	-	0.52*	-	0.42*	-	-	0.59*
General health domain	0.39*	-	0.64*	-	0.37*	-	-

*Significant at 0.05 level.

To find out if there is any positive correlation between different domains of QOL score of male patients with HIV/AIDS on ART, the null hypothesis stated as follows.

H02:

There will be no significant positive correlation between different domains of QOL among males with HIV/AIDS on ART.

In order to find out the correlation between different domains of QOL Karl Pearson's correlation coefficient was computed. There was significant positive relationship between all domains of QOL among males. So the researcher is accepting research hypothesis and rejects the null hypothesis.

Table 8. Correlation between different domains of QOL scores of female patients

(N = 30)

QOL domains	Physical Domain	Psychological domain	Level of dependency	Social relations	Environment	Spiritual domain	General health domain
Physical Domain	-	0.73*	-	0.52*	-	0.54*	-
Psychological domain	-	-	0.68*	-	0.63*	-	0.73*
Level of dependency	0.42*	-	-	0.77*	-	0.5*	-
Social relations	-	0.47*	-	-	0.43*	-	0.44*
Environment	0.23*	-	0.59*	-	-	0.56*	-
Spiritual domain	-	0.47*	-	0.42*	-		0.59*
General health domain	0.49*	-	0.54*	-	0.87*	-	-

*Significant at 0.05 level.

To find out if there is any positive correlation between different domains of QOL score of female patients with HIV/AIDS on ART, the null hypothesis stated as follows.

H03:

There will be no significant positive correlation between different domains of QOL among females with HIV/AIDS on ART.

In order to find out the correlation between different domains of QOL Karl Pearson's correlation coefficient was computed. There was significant positive relationship between all domains of QOL among females. So the researcher is accepting research hypothesis and rejects the null hypothesis.

SECTION V

Table 9: Association between the quality of life of male patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles

(N = 30)

Demographic variables and Clinical profile	Above mean	Below mean	χ2 value	Df
Age				
20 - 30 yrs	4	3		
31 - 40 yrs	3	9	1.3#	2
41 - 50 yrs	1	10		
Education				
Illiterate	2	2		
Primary	4	10	1.5#	3
Higher secondary	2	10		
Occupation				
Unemployed	2	3		
Coolie	2	12	0.84#	
Business	4	7		2
Marital status				
Single	2	9		
Married	3	13	1.4#	2
Divorced	3	0		
Place of residency				
Urban	4	12	1.6#	2
Rural	4	10		
Religion				
Hindu	3	12		
Muslim	2	3	3.12#	2
Christian	3	7		

Type of family				
Nuclear family	6	12		
Joint family	1	6	1.48#	2
Extended family	1	4		
Food habits				
Vegetarian	3	5	2.7#	1
Non vegetarian	5	17		
Duration of illness				
< 5 yrs	4	1		
5 - 10 yrs	2	12	13.11*	2
> 10 yrs	2	9		
History of opportunistic infection				
Yes	4	12	0.008#	1
No	4	10		
Onset of ART initiation				
< 3 yrs	2	9		
3 - 5 yrs	5	11	0.06#	2
> 5 yrs	1	2		
CD4 count (cells/ µl)				
<200	3	6		
201 - 300	2	11	1.455#	2
>301	3	13		
BMI				
< 24	1	5		
24 - 28	4	14	1.8#	2
>28	3	3		

* Significant at 0.05 level

\# Not significant at 0.05 level

To find out if there is any association between level of QOL score of male patiets with HIV/AIDS on ART and with their selected demographic variables and clinical profiles the null hypothesis stated as follows.

H04:

There will be no significant association between the QOL score of males and their selected demographic variables and clinical profiles.

In order to find out the association between the level of QOL score with their selected demographic variables and clinical profiles chi-square test was computed.

Regarding the association between the QOL score of subjects and the duration age, the obtained chi-square value of 1.3 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and education, the obtained chi-square value of 1.5 at df 3 (7.82) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and occupation, the obtained chi-square value of 0.84 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and marital status, the obtained chi-square value of 1.4 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and place of residency the obtained chi-square value of 1.6 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and religion the obtained chi-square value of 3.12 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and type of family the obtained chi-square value of 1.48 at df 2 (5.99) was not significant at ($P<0.05$) level.

Regarding the association between the QOL score of subjects and food habits, the obtained chi-square value of 2.7 at df 1 (3.84) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and the duration of illness, the obtained chi-square value of 13.11at df 2 (5.99) was significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and the History of opportunistic infection, the obtained chi-square value of 0.008 at df (3.84) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and onset of ART initiation, the obtained chi-square value of 0.03 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and CD4 count, the obtained chi-square value of 1.455 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and BMI the obtained chi-square value of 1.8 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and the duration of illness, the null hypothesis was rejected and research hypothesis was accepted. Regarding the association between the QOL score of subjects and remaining all other clinical profiles the null hypothesis was accepted and research hypothesis was rejected.

Table 10: Association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables.

(N=30)

Demographic variables	Above mean	Below mean	$\chi 2$ value	Df
Age				
20 - 30 yrs	1	5		
31 - 40 yrs	4	8	1.19#	2
41 - 50 yrs	3	9		
Education				
Illiterate	2	4		
Primary	2	11	1.555#	3
Higher secondary	4	7		
Occupation				
Unemployed	3	9		
Coolie	3	12	1.84#	2
Business	2	1		
Marital status				
Single	4	4		
Married	2	14	2#	2
Divorced	2	4		
Place of residency				
Urban	3	10	0.33#	2
Rural	5	12		
Religion				
Hindu	6	5		
Muslim	1	5	3.52#	2
Christian	1	11		

Type of family				
Nuclear family	4	13		
Joint family	3	5	0.37#	2
Extended family	1	4		
Food habits				
Vegetarian	4	6	0.74#	1
Non vegetarian	4	16		
Duration of illness				
< 5 yrs	9	8	3.31#	2
5 - 10 yrs	2	13		
> 10 yrs	2	1		
History of opportunistic infection				
Yes	3	9	0.027#	1
No	5	13		
Onset of ART initiation				
< 3 yrs	4	4	3.75#	2
3 - 5 yrs	3	13		
> 5 yrs	1	5		
CD4 count (cells/ µl)				
<200	3	6		
201 - 300	2	11	1.455#	2
>301	3	13		
BMI				
< 24	2	6		
24 - 28	5	11	1.08#	2
>28	1	5		

***** Significant at 0.05 level

Not significant at 0.05 level

To find out if there is any association between level of QOL score of females and their selected demographic variables the null hypothesis stated as follows.

H05:

There will be no significant association between the QOL score of females with HIV/AIDS on ART and with selected demographic variables and clinical profiles.

In order to find out the association between the level of QOL score and their selected demographic variables chi-square test was computed.

Regarding the association between the QOL score of subjects and the duration age, the obtained chi-square value of 1.19 at df 2 (5.99) was not significant at (P<0.05) level.
Regarding the association between the QOL score of subjects and education, the obtained chi-square value of 1.555 at df 3 (7.82) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and occupation, the obtained chi-square value of 1.84 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and marital status, the obtained chi-square value of 2 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and place of residency the obtained chi-square value of 0.33 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and religion, the obtained chi-square value of 3.52 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and type of family the obtained chi-square value of 0.37 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and food habits, the obtained chi-square value of o.74 at df 1 (3.84) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and the duration of illness, the obtained chi-square value of 3.31at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and the History of opportunistic infection, the obtained chi-square value of 0.027 at df (3.84) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and onset of ART initiation, the obtained chi-square value of 3.75 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and CD4 count, the obtained chi-square value of 1.455 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects and BMI the obtained chi-square value of 1.08 at df 2 (5.99) was not significant at (P<0.05) level.

Regarding the association between the QOL score of subjects with selected demographic variables and clinical profiles the null hypothesis was accepted and research hypothesis was rejected.

CHAPTER - V

DISCUSSION

Given the longevity achievable with current prophylactic and therapeutic strategies for persons with HIV infection, quality of life (QOL) has emerged as a significant medical outcome measure, and its enhancement has an important goal. **(Basavaraj, 2014).**

Several factors associated with better QOL among HIV-infected patients have been reported in the international literature, and mainly, the impact of HIV on QOL falls under four major. Components. Sociodemographic characteristics such as male gender, younger age, higher socioeconomic status, and employment have been associated with improvement in QOL. Other variables such as lower HIV viral load, greater CD4+ cell count, fewer or less bothersome HIV symptoms, and higher levels of hemoglobin have been shown to be important clinical/immunological indicators of better QOL. **(Ruiz Perez, 2005).**

The quality of life (QOL) among male and female patients affected with HIV/AIDS who are an antiretroviral therapy may differ due to so many reasons in India. This is a challenging issue to improve the quality of life of HIV persons for health care workers. Understanding these gender differences may provide potentially useful information for tailoring interventions to enhance QOL among people infected with HIV/AIDS.

The study has conducted to find out the quality of life (QOL) among male and female patients affected with HIV/AIDS who are an antiretroviral therapy from selected Non Governmental organization of Madurai.

The study consisted total of 60 samples, 30 males and 30 females. The design adopted for the study was descriptive comparative design. The tool used for the present study is WHO QOL-HIV brief scale.

The study findings are discussed in this chapter with reference to the objectives and hypotheses as started in chapter I.

Distribution of subjects with regard to the selected demographic variables and clinical profiles.

With regard to age in males 12 (40%) samples were 31 - 40 years and 41 – 50 years, and in females 12 (40%) samples were in the age group of 31 – 40 years. Regarding education in males 13 (43%) samples were completed primary education, and in females 14 (47%) samples were completed primary education. With regard to occupation half of samples 15 (53.3%) were coolie in males and in females majority of sample were coolie 14 (47%) respectively. Regarding marital status in males 16 (53%) samples were married and in females 16 (53%) were married . With regard to place of residency, in males 17(57%) were living in rural and in females 16 (53%) were living in urban. Regarding religion, in males 12 (40%) were Hindus and Christians and in females 15 (50%) were Hindus. With regard to type of family, most of the males (57%) were living in nuclear family and in females 18 (60%) were living in nuclear family. Regarding food habits, 20 (67%) males were non vegetarian and 22 (73%) females were non vegetarian. Regarding to duration of illness, both males 14 (47%) and females15 (50%) were found to have HIV for 5years - 10 years. Regarding history of opportunistic infection, 16(53%) of males are having opportunistic infection and 18 (60%) of females are not having history of opportunistic infection. With regard to ART initiation, half of the samples in both

group 16 (53%) were under ART treatment for 3 – 5 years. With regard to CD4 count 13 (43%) of males were having CD4 count >300 cells/ µl and 13 (43%) females were having CD4 count > 300 cells/ µl. With regard to BMI, 18 (60%) of males were having BMI of 24 – 28 and 16 (53%) of females were having BMI of 24 – 28.

The first objective of the study was to assess the quality of life among male and female patients with HIV/AIDS who are on ART.

Table 3 shows that in males (0%) none of them had very good QOL , poor QOL and very poor QOL. In males 28 (93.3%) of subjects were having good quality of life and 2 (6.7%) of subjects were having moderate QOL .

Whereas in females (0%) none of them had very good QOL , poor QOL and very poor QOL. In females 9 (30%) of subjects having good QOL and 21 (70%) of subjects were having moderate QOL.

The similar findings were expressed by Deepika Anand, Seema Pur and Minnie Mathew, (2012), conducted a study to evaluate the quality of life (QOL) of people living with HIV/AIDS (PLHIV) receiving ART and its association with Body mass index (BMI) and CD4 count. An observational study was performed on PLHIV receiving ART in Orissa, India. Data on sociodemographic profile, BMI, and CD4 were gathered from 153 HIV-positive subjects. QOL was assessed using WHOQOL-HIV BREF scale. The overall QOL score of the subjects was moderate; PLHIV with lower BMI also had poorer QOL ($P<0.05$). Employment affected only the social health domain of the subjects. Men reported poorer level of independence and physical health while women reported poorer social relationships and environment. All the six domains correlated significantly with the overall QOL.

The second objective of the study was to compare the level of quality of life between male and female patients with HIV/AIDS who are on ART.

As per table 4 the males 18 (60%) subjects were having good QOL in physical domain whereas in females 16 (53%) subjects were having moderate QOL in physical domain. Regarding psychological domain, there was an equal distribution of 16 (53%0 males and females were found to have good QOL. In males 15 (50%) subjects were having good QOL in level of dependency domain whereas in females 20 (66%) subjects were having moderate QOL in dependency domain. In males 16 (53%) subjects were having good QOL in social relations domain whereas in females the same 16 (53%) subjects were having moderate QOL in social relations domain. In males 18 (60%) subjects were having good QOL in environmental domain whereas in females 17 (57%) subjects were having moderate QOL in environmental domain. In males 15 (60%) subjects were having good QOL in spiritual domain whereas in females 18 (60%) subjects were having moderate QOL in spiritual domain. In males 15 (60%) subjects were having good QOL in general health domain whereas in females 16 (53%) subjects were having moderate QOL in general health domain.

Table 5 shows that in male HIV patients the mean QOL score is 102 and the female HIV patients the mean QOL score is 92, which is lower than the male HIV patients the mean QOL score. The standard deviation of male HIV patients is 6.17 and the standard deviation female HIV patient is 6.07. The unpaired‘t’ value is 6.34 is statistically significant at 0.05 level. As per table 6 the association between the QOL score of subjects and their gender, the obtained chi-square value of 28.7 at df 1 (3.84) was significant at ($P<0.05$) level. This indicates that the association between the QOL score and gender.

The present study findings coincide with the study findings of Praba and Chandra et al., (2009), examined gender differences in Quality of Life (QOL) among people living with HIV/AIDS in South India using the locally validated version of the WHO Quality of Life Instrument for HIV (WHOQOL-HIV 120). Participants (N = 109) were men and women with HIV1 infection participating in a cohort study. There was no gender difference in CD4 counts or use of antiretroviral therapy. Of the 29 facets of QOL, men reported significantly higher QOL in the following facets-positive feeling, sexual activity, financial resources and transport, while women reported significantly higher QOL on the forgiveness and blame facet. Of the six domains of QOL, men reported better quality of life in the environmental domain while women had higher scores on the spirituality/religion and personal beliefs domain.

The third objective of the study was find out the relationship between different domains of QOL among male subjects with HIV/AIDS on ART.

As per table 4 in males 18 (60%) subjects were having good QOL in physical domain. Regarding psychological domain, there was an equal distribution of 16 (53%0 males and females were found to have good QOL. In males 15 (50%) subjects were having good QOL in level of dependency domain. In males 16 (53%) subjects were having good QOL in social relations domain. In males 18 (60%) subjects were having good QOL in environmental domain. In males 15 (60%) subjects were having good QOL in spiritual domain. In males 15 (60%) subjects were having good QOL in general health domain.

The similar findings were expressed by Nirmal, Divya (2008) aimed to assess the quality of life in human immunodeficiency virus HIV)/acquired immune

deficiency syndrome (AIDS) patients at antiretroviral therapy (ART) clinic in a tertiary healthcare centre in South India. The study was conducted on 60 HIV/AIDS patients attending ART clinic at a tertiary health hospital, Chennai, South India. QOL was evaluated using the WHO QOL-BREF (Field trial version) instrument using 26 items grouped under 4 domains, namely physical health, psychological well-being, social relationships, and environment on 60 HIV/AIDS patients. Standard error of the difference between means was employed to find out significant difference between domain scores and clinical categories. QOL scores were highest for environmental domain which is 46.19 (0-100 scale). QOL scores were significantly lower among persons with lower CD4 counts (P< 0.001). Women had lower QOL scores than men despite having less advanced disease.

Fourth objective of the study was to find out the relationship between different domains of QOL among female subjects with HIV/AIDS on ART.

As per table 4 in females 16 (53%) subjects were having moderate QOL in physical domain. Regarding psychological domain, there was an equal distribution of 16 (53%0 males and females were found to have good QOL. In females 20 (66%) subjects were having moderate QOL in dependency domain. In females the same 16 (53%) subjects were having moderate QOL in social relations domain. In females 17 (57%) subjects were having moderate QOL in environmental domain. In females 18 (60%) subjects were having moderate QOL in spiritual domain. In females 16 (53%) subjects were having moderate QOL in general health domain.

The similar findings were expressed by Duo Shan, et.al., (2011), conducted a study to describe the quality of life and related factors in HIV-positive spouses undergoing ART from discordant couples. A cross-sectional study was conducted

among 1,009 HIV-positive spouses from couples in Zhumadian, Henan Province, between October 1, 2008 and March 31, 2009. HIV-positive spouses were interviewed by local health professionals. Quality of life was evaluated by WHOQOL (Chinese Version). A multiple linear regression model was used to analyze the related factors. The physical, psychological, social, and environmental QOL scores of the subjects were 12.91±1.95, 12.35±1.80, 13.96±2.43, and 12.45±1.91 respectively. The multiple linear regression model identified the physical domain related factors to be CD4 count, educational level, and occupation; psychological domain related factors included age, educational level, and reported STD symptom; social domain related factors included education level; and environmental domain related factors included education level, reported STD symptoms, and occupation. Being younger, a farmer, had a lower level of education, a reported STD symptom, or lower CD4 count, could decrease one's quality of life, suggesting that the use of blanket ART programs alone may not necessarily improve quality of life. Subjects received lower scores in the psychological domain, suggesting that psychological intervention may also need to be strengthened.

Fifth objective of the study was to find out the association between the quality of life of male and female patients affected with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, and duration of receiving ART and Co-morbid conditions).

As per table 9 there was significant association between the QOL score of subjects and the duration of illness and there was no significant association between the quality of life of male patients affected with HIV/AIDS on ART with their other demographic variables and clinical profiles.

As per table 10 there was no significant association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles.

The similar study conducted by Naveet Wig, et al., (2006), conducted a cross sectional study to determine the impact of Human Deficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) on the quality of life (QOL) among 68 patients in North India. QOL was evaluated using the WHOQOL-Bref (Hindi) instrument. One way Analysis of Variance (ANOVA) was performed to find out significant difference between the clinical categories and socio-demographic variables on QOL domains. The overall QOL mean score on a scale of 0-100 was found to be 25.8. Similarly, on the scale of 0-100 the mean scores in the four domains of QOL in descending order were social (80.9); psychological (27.5); physical (17.7) and environmental domain (11.65). There was a significant difference of quality of life in the physical domain between asymptomatic patients (14.6) and patients with AIDS (10.43) defining illnesses ($p<0.001$) and asymptomatic and early symptomatic (12) patients ($p=0.014$). QOL in the psychological domain was significantly poorer in early symptomatic (12.1) ($p<0.05$) and AIDS patients (12.4) ($p<0.006$) as compared to asymptomatic individuals (14.2). A significant difference in QOL scores in the psychological domain was observed with respect to the educational status ($p<0.037$) and income of patients ($p<0.048$). Significantly better QOL scores in the physical ($p<0.040$) and environmental domain ($p<0.017$) were present with respect to the occupation of the patients. Patients with family support had better QOL scores in environmental domain. QOL was associated with education, income, occupation, family support and clinical categories of the patients.

CHAPTER-VI
SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATION

This chapter presents the summary, major findings, conclusion, implications and Recommendation of the study.

SUMMARY OF THE STUDY

The aim of the study was to compare the quality of life (QOL) among male and female patients affected with HIV/AIDS receiving antiretroviral therapy from selected Non Governmental organization of Madurai.

The objectives of the study

1. To assess the quality of life among male and female patients with HIV/AIDS who are on ART
2. To compare the level of quality of life between male and female patients with HIV/AIDS who are on ART.
3. To find out the relationship between different domains of QOL among male subjects with HIV/AIDS on ART.
4. To find out the relationship between different domains of QOL among female subjects with HIV/AIDS on ART.
5. To find out the association between the quality of life of male and female patients affected with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, and duration of receiving ART and Co-morbid conditions).

Following hypotheses were set for the study, and all hypotheses were tested at 0.05 level of significance.

There will be a significant difference in the quality of life between male and female patients affected with HIV/AIDS receiving ART.

There will be a significant positive relationship between the different domains of quality of life between male subjects with HIV/AIDS on ART.

There will be significant positive relationship between the different domains of quality of life between female subjects with HIV/AIDS on ART.

There will be a significant association between quality of life among the male patients with HIV/AIDS on ART with their selected demographic variable (age, education, occupation, income, marital status, locality, duration of illness, duration of receiving ART).

There will be a significant association between quality of life among the female patients with HIV/AIDS on ART with their selected demographic variables (age, education, occupation, income, marital status, locality, duration of illness, duration of receiving ART).

Major findings of the study

Description of demographic variables and clinical profiles.

With regard to age in males 12 (40%) samples were 31 - 40 years and 41 – 50 years, and in females 12 (40%) samples were in the age group of 31 – 40 years.

Regarding education in males 13 (43%) samples were completed primary education, and in females 14 (47%) samples were completed primary education.

With regard to occupation half of samples 15 (53.3%) were coolie in males and in females majority of sample were coolie 14 (47%) respectively.

Regarding marital status in males 16 (53%) samples were married and in females 16 (53%) were married .

With regard to place of residency, in males 17(57%) were living in rural and in females 16 (53%) were living in urban.

Regarding religion, in males 12 (40%) were Hindus and Christians and in females 15 (50%) were Hindus.

With regard to type of family, most of the males (57%) were living in nuclear family and in females 18 (60%) were living in nuclear family.

Regarding food habits, 20 (67%) males were non vegetarian and 22 (73%) females were non vegetarian.

Regarding to duration of illness, both males 14 (47%) and females15 (50%) were found to have HIV for 5years - 10 years.

Regarding history of opportunistic infection, 16(53%) of males are having opportunistic infection and 18 (60%) of females are not having history of opportunistic infection.

With regard to ART initiation, half of the samples in both group 16 (53%) were under ART treatment for 3 – 5 years.

With regard to CD4 count 13 (43%) of males were having CD4 count >300 cells/ µl and 13 (43%) females were having CD4 count > 300 cells/ µl.

With regard to BMI, 18 (60%) of males were having BMI of 24 – 28 and 16 (53%) of females were having BMI of 24 – 28.

In males (0%) none of them had very good QOL , poor QOL and very poor QOL. In males 28 (93.3%) of subjects were having good quality of life and 2 (6.7%) of subjects were having moderate QOL .

In females (0%) none of them had very good QOL , poor QOL and very poor QOL. In females 9 (30%) of subjects having good QOL and 21 (70%) of subjects were having moderate QOL.

The unpaired‘t’ value is 6.34 is statistically significant at 0.05 level. This indicates that the mean difference of 10 score of QOL was a true difference and had not occurred by chance.

There was a significant association between the QOL score of subjects and the duration of illness and there was no significant association between the quality of life of male patients affected with HIV/AIDS on ART with their other demographic variables and clinical profiles.

There was no significant association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles.

CONCLUSION

The following conclusions were drawn from the study

1. Men had higher QOL score than women
2. Men had good QOL score whereas women had only moderate QOL score
3. Men reported Good QOL in the physical domain and environmental domain while women had good QOL in the psychological and spiritual domain.
4. All the seven domains correlated significantly with the overall QOL for male and female patients with HIV/AIDS on ART
5. There was a significant association between the QOL score and gender.

6. There was a significant association between the QOL of male patients affected with HIV /AIDS on ART only with their duration of illness.
7. There was no significant association between the quality of life of female patients affected with HIV/AIDS on ART with their selected demographic variables and clinical profiles.

IMPLICATIONS:

This study has many implications in the field of nursing this includes nursing practice, nursing education, nursing research and nursing administration.

NURSING PRACTICE

The findings of the study clearly point out that

- Enhancing QOL among HIV patients is a big challenge for Nurses and need to take up the challenge to provide comfortable living environment to HIV/AIDS patients.
- Nurses can understand the differences in QOL of HIV patients regard to gender which helps to enhance the nursing care for females and encourage them to utilize the facilities.
- The study helps the nursing community to encourage the females for adopting coping strategies to overcome stress.

NURSING EDUCATION

- Nurses and other health care professionals can be educated on important role in enhancing QOL among HIV patients and their family members about healthy practices for healthy living.

- Nursing students can understand the differences in QOL of HIV patients regard to gender which helps to enhance the nursing care for HIV patients.
- Nursing personal should be given in-service education to update their knowledge and improve their state in nursing education which helps to enhance the QOL of HIV patients.

NURSING RESEARCH

- The information from this research helps to boost up for performance of nurses in the community and clinical settings.
- This study can potentially play a pivotal role at each phase of nursing process by helping the nurses to make more critical thinking and take skilful decision.
- It also helps the nursing personal to develop inquiry by providing a base for further research.

NURSING ADMINISTRATION

- Knowledge on the QOL among patients with HIV/AIDS on ART will help nurses to function as nurse advocates.
- Nurse advocates can be established by the effective nursing administrators, who take active part in policy making develop protocol and procedures regarding education to HIV/AIDS patients.
- Helps the nurse administrator for recommending Government and NGO's for adequate staffing can be on handed for better quality care and quality of life among HIV/AIDS patients.

LIMITATIONS:

- The study was done on small sample size of 60, hence generalization is possible only for the selected populations in Nongovernmental organization in Madurai during the data collection period.
- This study was limited to 6 weeks data collection period.
- This study included only the assessing the QOL of HIV/AIDS patients and not having any interventions to enhance the QOL.

RECOMMENDATIONS:

- The study can be conducted using large population to generalize the findings.
- A longitudinal study can be conducted to assess the QOL of HIV/AIDS patients by introducing any interventions to enhance the QOL.
- This study can be carried out to evaluate the various treatment modalities to enhance QOL.
- This study can be done in a time series study with multiple institution of treatment to identify the exact coping strategies suitable for males and females.

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APPENDIX – I

SACRED HEART NURSING COLLEGE

ULTRA TRUST

4 / 235, COLLEGE ROAD,
THASILDAR NAGAR,
MADURAI - 625 020.
TAMILNADU, INDIA.
PHONE : 0452 - 2534593
Email : ultratrust@rediffmail.com

Ref : UT : SHNC:Ph.D(N) : 2015

Date : 13.07.2015

ETHICAL COMMITTEE

The following members of the ethics committee were present at the meeting held on 13.07.2015 at 2.15 pm in Sacred Heart Nursing College.

CHAIR PERSON

1. Dr.SABHESAN, M.B.B.S. DPM, MNAMS, Ph.D.
   Head, Department of Psychiatry
   CSI Mission Hospital, Madurai.

DEPUTY CHAIRMAN

2. Dr.NALINI JEYAVANTH SANTHA, M.Sc., (N) Ph.D.
   Principal, Sacred Heart Nursing College, Madurai – 625 020.

MEMBER SECRETARY

3. Dr. S.CHANDRAKALA, M.Sc., (N) Ph.D
   Vice Principal, Sacred Heart Nursing College, Madurai – 625 020.

MEMBERS PRESENT

4. Dr. JULIET SYLVIA, M.Sc., (N) Ph.D.
   Head, Department of Community Health Nursing,
   Sacred Heart Nursing College, Madurai – 625 020.

5. Prof. DEVAKIRUBAI, M.Sc., (N) Ph.D.
   Professor, Department of Medical Surgical Nursing,
   Sacred Heart Nursing College, Madurai – 625 020.

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6. Dr. VIJAYA, M.Pharm., Ph.D
Dean, Clinical Pharmacologist
Ultra College of Pharmacy, Madurai

7. Mr. CHINNAKARUPPAN M.A., B.L., DCFSC
Advocate and Notary Public,
14, Asari Street, Thallakulam, Madurai – 2.

8. Dr. RAJASEKARAN, M.B.B.S, D.F.M. D.Diab
Pathologist
Best Dental Science College,
Ultra Trust,
Ultra Nagar, Madurai

RESOLUTION – 3/2015

It is resolved to accept **Mr. Y.P. NAYAGAM** to conduct a study "A comparative study to findout the Quality of Life (QOL) among male and female patients affected with HIV/AIDS who are on Anti Retroviral Therapy (ART) from selected areas of Madurai.

The institutional Ethics Committee expects to be informed about the progress of the study, any changes in the protocol, patient information and asks to be provided a copy of the final report.

Yours Sincerely

Chair Person
Ethics Committee

Dr.SABHESAN, M.B.B.S. DPM, MNAMS, Ph.D.

Member Secretary
Ethics Committee

Dr. S.CHANDRAKALA , M.Sc., (N) Ph.D
Prof. S. CHANDRAKALA, MSc. (N)
VICE PRINCIPAL, HOD OF MED. SUR.DEPT.
SACRED HEART NURSING COLLEGE
ULTRA TRUST, MADURAI-20

APPENDIX – II

COPY OF LETTER SEEKING PERMISSION TO CONDUCT THE STUDY IN SELECT THE HOSPITAL

Dr. NALINI JEYAVANTH SANTHA
Principal.

4/235, COLLEGE ROAD
THASILDAR NAGAR
MADURAI – 625 020
PHONE: 2534593

Ref. UT : SHNC : 2014 Date:

To

Mr. Ayyappan, M.A, B.L President -
of Voice Network for
People living with HIV/AIDS

Respected Sir / Madam,

Sub: Sacred Heart Nursing College, Madurai – Project work of M. Sc (Nursing) student – permission requested – reg.

We wish to state that Mr.Y.P.Nayagam, II year M. Sc (Nursing) student of our college has to conduct a Research project, which is to be submitted to The Tamilnadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of University requirements. The topic of research project is "A comparative study to find out the quality of life (QOL) among male and female patients affected with HIV/AIDS who are an antiretroviral therapy from selected ART centers of Madurai".

We therefore request you to kindly permit her to do the research work in your organization under your valuable guidance and suggestions.

Thanking you,

Yours faithfully,

Permitted.

VNP +
23, குமாரசாமி ராஜா தெரு
சொனாய்நகர், மதுரை–20
PH:0452-2529422

Principal
(Dr. NaliniJeyavanthyaSantha)

APPENDIX – III

CONTENT VALIDITY CERTIFICATE

This is to certify that I Prof. manjula, PhD have gone through the tool developed by Mr.Y.P.Nayagam II year M. Sc (N) student of Sacred Heart Nursing College, Madurai. (Affiliated to Dr. M.G.R Medical University, Chennai)

This statement of the problem in his study **"A COMPARATIVE STUDY TO FINDOUT THE QOL AMONG MALE AND FEMALE PATIENTS AFFECTED WITH HIV/AIDS WHO ARE ON ART FROM SELECTED ART CENTERS OF MADURAI".**

I have gone through the tool for construct, content and criterion validity. I certify that this tool can be used for above mentioned study.

Signature

Designation & Seal of the expert

APPENDIX - IV

LIST OF EXPERTS

1. **Dr.M.Raja Sekaran, M.B.B.S., D.F.M.,**

   Pathologists, Best Dental Science College,

   Ultra Trust, Ultra Nagar, Madurai

4. **Dr.Nalini Jeyavantha Santha, M.Sc(N)., Ph.D.,**

   Principal,

   Sacred Heart College of Nursing, Madurai

5. **Dr. Chandrakala, M.Sc(N), Ph.D.,**

   Vice Principal,

   Sacred Heart College of Nursing, Madurai.

6. **Dr.Devakirubai, M.Sc(N)., Ph.D.,**

   Professor,

   Sacred Heart College of Nursing, Madurai.

7. **Mrs. Manjula, M.Sc(N), Ph.D.,**

   Professor,

   Sacred Heart College of Nursing, Madurai.

8. **Mrs.Thangapappa, M.Sc(N).,**

   Asso. Professor,

   Sacred Heart College of Nursing, Madurai.

9. **Mr.Madhan, M.Sc., M.Phil.,**

   Bio-Statistician,

   Manamadurai.

APPENDIX –V

CONSENT FORM

All the details of this study was being explained to me. I am aware that the information collected from me will be used for the purpose of the study. All the information collected will be highly confidential. Thereby I am willing to participate in this study on my own interest and wish.

Participant's Signature

Researcher's Signature

ஒப்புதல் படிவம்

இந்த ஆராய்ச்சிப் பற்றி எனக்கு முழு விபரம் அளிக்கப்பட்டுள்ளது. என்னை பற்றி புள்ளி விபரங்கள் அனைத்தும் ஆராய்ச்சியின் பயன்பாட்டிற்காக சேகரிக்கப்படும் என்பதை நான் நன்றாக அறிந்துள்ளேன். இந்த ஆராய்ச்சியை ஒற்றி எந்த வித தீங்குகள் ஏற்படாது என்பதை மேலும் இதன் விபரங்கள் பிறர் அறியா வண்ணம் வைக்கப்படும் என்பதை அறிந்துள்ளேன். மேலும் நான் இந்த ஆராய்ச்சியில் பங்கேற்க முழு ஒப்புதல் அளிக்கிறேன்.

இடம்: பங்கேற்பவரின்

கையொப்பம்

நாள்: ஆராய்ச்சியாளரின்

கையொப்பம்

APPENDIX – VI

Questionnaire to assess the QOL of patients with HIV/AIDS on ART

Part - I

Demographic Profile:

Age :

Sex :

Education :

Occupation :

Income :

Marital Status :

Place of Residence :

Habits :

Religion :

Types of Family :

Nutritional Status :

Clinical Profile:

Duration of illness :

History of opportunistic infection : Yes / No,

If Yes Specify the Conditions :

Onset of ART initiation :

CD4 count :

Drug name :

BMI :

Modified WHO HIV QOL Brief Scale

Domain 1 – Physical

	Not at all	A little	A moderate amount	Very much	An extreme amount	Total
To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1	
	Not at all	**A little**	**Moderately**	**Mostly**	**Completely**	**Total**
Do you have enough energy for everyday life?	1	2	3	4	5	
	Very dis-satisfied	**Dissatisfied**	**Neither satisfied nor-dissatisfied**	**Satisfied**	**Very satisfied**	**Total**
How satisfied are you with your sleep	1	2	3	4	5	

Total - 20

Domain II – Psychological

	Not at all	A little	A moderate amount	Very much	An extreme amount	Total
How much do you enjoy life?	1	2	3	4	5	
	Not at all	**A little**	**Moderately**	**Mostly**	**Completely**	**Total**
Are you able to accept your bodily appearance?	1	2	3	4	5	
	Very dis-satisfied	**Dissatisfied**	**Neither satisfied nor-dissatisfied**	**Satisfied**	**Very satisfied**	**Total**

How satisfied are you with your self?	1	2	3	4	5	
	Never	**Seldom**	**Quite often**	**Very often**	**Always**	**Total**
How often do you have negative feelings such as blue mood, despair, anxiety, depression	5	4	3	2	1	

Total – 25

Domain III – Level of independence:

	Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**	**Total**
How much do you need any medical treatment to function in your daily life?	1	2	3	4	5	
	Very poor	**Poor**	**Neither poor nor good**	**Good**	**Very Good**	**Total**
How well are you able to get around?	1	2	3	4	5	
	Very satisfied	**Dis Satisfied**	**Neither satisfied nor dis-satisfied**	**Satisifed**	**Very satisfied**	**Total**
How satisfied are your with you ability to perform your daily living activities?	1	2	3	4	5	
How satisfied are you with your capacity for work?	1	2	3	4	5	

Total – 20

Domain IV – Social Relations:

	Not at all	**A little**	**Moderately**	**Mostly**	**Completely**	**Total**
To what extent do you feel that you are accepted by the people you know?	1	2	3	4	5	

	Very satisfied	Dis Satisfied	Neither satisfied nor dis-satisfied	Satisifed	Very satisfied	Total
How satisfied are you with your personal relationships?	1	2	3	4	5	
How satisfied are you with your sex life?	1	2	3	4	5	
How satisfied are you with the support you get from your friends?	1	2	3	4	5	

Total – 20

Domain V – Environment

	Not at all	A little	A moderate amount	Very much	An extreme amount	Total
How safe do you feel in your daily life?	1	2	3	4	5	
How healthy in your physical environment?	1	2	3	4	5	
	Not at all	**A little**	**Moderately**	**Mostly**	**Completely**	**Total**
Do you have enough money to meet your needs?	1	2	3	4	5	
How available to you is the information that you need in your day-to-day life?	1	2	3	4	5	
To what extent do you have the opportunity for leisure activities?	1	2	3	4	5	
	Very satisfied	**Dis Satisfied**	**Neither satisfied nor dis-satisfied**	**Satisifed**	**Very satisfied**	**Total**
How satisfied are you with	1	2	3	4	5	

the conditions of your living place?						
How satisfied are you with your access to health services?	1	2	3	4	5	
How satisfied are you with your transport?	1	2	3	4	5	

Total – 40

Domain VI – Spiritual

	Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**	**Total**
To what extend do you feel your life to be meaningful?	1	2	3	4	5	
To what extent are you bothered by people blaming you for your HIV status?	5	4	3	2	1	
How much do you fear about the future?	5	4	3	2	1	
How much do you worry about death?	5	4	3	2	1	

Total – 20

General:

	Very Poor	**Poor**	**Neither Poor nor good**	**Good**	**Very good**	**Total**
How would you the quality of your life?	1	2	3	4	5	
	Very satisfied	**Dis Satisfied**	**Neither satisfied nor dis-satisfied**	**Satisifed**	**Very satisfied**	**Total**
How satisfied are you with your health?	1	2	3	4	5	

Total – 10

Scoring:

Content	Score	Percentage
Very good QOL	125-155	81 - 100%
Good QOL	94-124	61 - 80%
Moderate QOL	63-93	41 - 60%
Poor QOL	32-62	21 - 40%
Very poor QOL	1-31	17 - 20%

vr/l/tpnehahspfspd thHf i f juj jpi d ehz apfFk tpdh

bjhFggfs

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ghjpffgglthfspd j f t y f s

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Kf thp :

gHf f tHf f k :

kjk :

FLkg t i f :

c z t gHf f tHf f ' f s :

kUj J t j f t y f s

v t t s t ehl f s nehathaglLsshfs :

e' f s ghjpffgglLss nehapdhy : Mk- , y i y

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e' f s c l bfhsSk kUeJ bgah :

gFjp?2

clyhjpahf

t/vz		vJtkpyiy	rpwjst	rhjhuz mst	mjpfk	kpfmjpfk	bkhjjk
1	Vjht J ntiy braak nghJ cly hjpahf typ nghdw mDgt'fis czhfpdwhfsh?	5	4	3	2	1	
		vJtkpyiy	rpwjst	rhjhuz mst	bgUkst	KGtJkhf	bkhjjk
2	jpdenjhWk ntiy bratjwnfww Mwwy csjh?	1	2	3	4	5	
		kpftk ijUgjp	jpUgjp .yiy	jpUgjp myyJ mikUgjp	jpUgjp	kpftk ijUgjp	bkhjjk
3	c'fSila J}ffjjpy vggo jpUgjp milfpwhfs?	1	2	3	4	5	

bkhjjk?20

cshjpahf – kdhjpahf

t/vz		vJtkpyiy	rpwjst	rhjhuz mst	mjpfk	kpfmjpfk	bkhjjk
4	c'fs thHfifapy vttst renjhclkhf ,Uffpwhfs?	1	2	3	4	5	

		vJtkyiy	rMjst	rhjhuz mst	bgUkst	KGtJkhf	bkhjjk
5	e'fs c'fs. clyhjpahd khww'fis VwWf bfhsfpwhfsh?	1	2	3	4	5	
		kpftk ipUgjp	jpUgjp .yiy	jpUgjp myyJ mikiu	jpUgjp	kpftk ipUgjp	bkhjjk
6	jddkgpfifapy. vej mstpwF jpUgjpahf ,Uffpwhfs?	1	2	3	4	5	
		,yiy	Xust	mikjp	kpftk mikjp	vgbghGJk	bkhjjk
7	vJtiufFk jtwhd czhtfis bfhzLsshfs?	5	4	3	2	1	

bkhjjk?25

gpwiu rhheJss epiy

t/vz		vJtkyiy	rMjst	rhjhuz mst	mjpfk	kpf mjpfk	bkhjjk
8	jpdenjhWk thHtpwF njitahd ntiyfis bratjwfhd Mwwiy kUjJt rpfprir Kyk nkwbfhsfpwhfsh?	1	2	3	4	5	
t/vz		kpftk nkhrk	nkhrk	xUtiy nkhrk(m) eyyJ	eyyJ	kpftk eyyJ	bkhjjk

9	c'fis RwwpYk ,Uggthfis vtthW epidffpwhfs?	1	2	3	4	5	
		kpftk ipUgip	jpUgjp .yiy	jpUgjp myyJ miuUgip	jpUgjp	kpftk ipUgip	bkhjjk
10	jpdenjhWk c'fSfF njitahd epfHtfis bratjpy jpUgjp milfpdwhfsh?	1	2	3	4	5	
11	xU ntiyia KoggjwF njitahd jpwik c'fsplk cssjh?	1	2	3	4	5	

bkhjjk ? 20

rKfhjpahd

t/vz		vJtkpyiy	rpwjst	rhjhuz mst	mjpfk	kpf mjpfk	bkhjjk
12	c'fSfF bjhpejthfis vtthW epidffpdwhfs?	1	2	3	4	5	
		kpftk ipUgip	jpUgjp .yiy	jpUgjp myyJ miuUgip	jpUgjp	kpftk ipUgip	bkhjjk
13	c'fSila Ra tpUgg'fspy vej mstpwF jpUgjp milfpwhfs?	1	2	3	4	5	
14	c'fSila clYwt gHff'fspy vttst jpUgjp milfpwhfs?	1	2	3	4	5	
15	ezghfSld css bjhlhgpy vttst jpUgjp milfpwhfs?	1	2	3	4	5	

RwWrR{Hy bjhlhghf

t/vz		vJtkyiy	rMjst	rhjhuz mst	mjfk	kjf mjfk	bkhjjk
16	jdenjhWk c'fs thHfi fay; ghJfhgghf csshfsh?	1	2	3	4	5	
17	c'fSila RwWggwjjy; Mnuhffakhf csshfsh?	1	2	3	4	5	
		vJtkyiy	rMjst	rhjhuz mst	bgUkst	KGtJkhf	bkhjjk
18	c'fs njitfis g{hjj; bratjwF njiahd mst gztrj; cssjh?	1	2	3	4	5	
19	thHfiffF njitahd jftyfs c'fSfF nghJkhd mst;wF f;ilffg bgWf;dwdth?	1	2	3	4	5	
20	bghGJnghfF e;fHtfs;y vej mst;wF g'F bfhsf;dwhfs?	1	2	3	4	5	
		kjftk ij;Ugj;	j;Ugj; .yiy	j;Ugj; myyJ mikUgj;	j;Ugj;	kjftk ij;Ugj;	bkhjjk
21	c'fSila thHt;ljj;y j;Ugj;ahf ,Uff;dwhfsh?	1	2	3	4	5	
22	cly eyjj;wF njitahd kUjJt trj;fs;y e;iwt bgWf;dwhfsh?	1	2	3	4	5	
23	nghfFtujJ trj;fs;y j;Ugj; milf;whfsh?	1	2	3	4	5	

bkhjjk?40

M tpf Fhpa

t/vz		vJtk ,yiy	rMMjst	rhjhuz	mjpfk	kpf mjpfk	bkhjjk
24	c'fSila thHfif mhjj Kssjhf ,Uffpdwjh?	1	2	3	4	5	
25	kffs c'fis ,Hpthf vz Qqk nghJ ftiyggL fpwhfsh?	1	2	3	4	5	
26	tU'fhyjijg gwwp vej mstpwF gaggL fpdwhfs?	1	2	3	4	5	
27	kuzjijg gwwp vej mstpwF ftiyggL fpdwhfs?	1	2	3	4	5	

bghJ thf

t/vz		kpftk nkhrk	nkhrk	xUntiy nkhrk (m) eyyJ	eyyJ	kpftk eyyJ	bkhjjk
28	c'fSila thHfifj jujij vej mstpwF Fwpggpl fpdwhfs?	1	2	3	4	5	
		kpftk ipUgjp	jpUgjp .yiy	jpUgjp myyJ miuUgjp	jpUgjp	kpftk ipUgjp	bkhjjk
29	c'fs cly eyjijg gwwp vej mstpwF jpUgjp milfpwhfs?	1	2	3	4	5	

bkhjjk ? 10

kjpggL

bghUs	kjpgg	mst
kpftk eyy	**125-155**	**81 – 100%**
eyy	**94-124**	**61 – 80%**
rhjhuz	**63-93**	**41 – 60%**
nkhrkhd	**32-62**	**21 – 40%**
kpftk nkhrkhd	**1-31**	**17 – 20%**